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CHILDREN'S TELEVISION WORKSHOP EXPLORES THE WORLD

DECEMBER 1992

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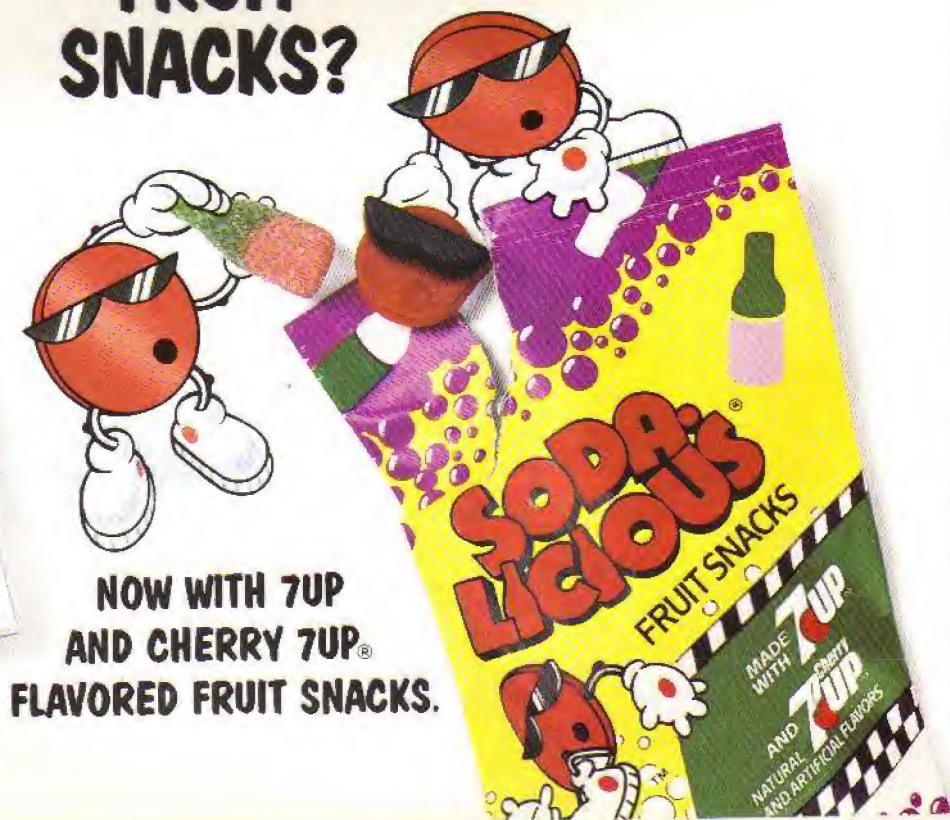
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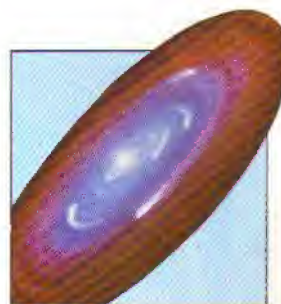
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ON OUR COVER

A polar bear relaxes in
the Arctic snow.
Photo © Art Wolfe/Allstock.



SUMMIT UP!

What holds endless tons of garbage, all our endangered species and is full of hot air? The answer: Earth!

Thousands of people—including 118 world leaders—met in Brazil last June to help solve these environmental problems. After

weeklong meetings, the leaders signed treaties to save our planet.

The Earth Summit may have been the most earth-shaking environmental story in 1992. But it wasn't the only one. Here are a few that also made the news.

Deja Shoes

If you think recycling is a smart idea, go take a hike—in a pair of recycled hiking shoes!

Thanks to a shoe company in Portland, OR, things you'd normally find in a landfill—sawdust, disposable diapers, metal shavings, coffee filters and foam rubber—are now

underfoot. The company, you see, is turning this garbage into hiking and running shoes.

"We're recycling things that won't decompose naturally," says Scott Taylor of Deja, Inc. "For example, we take the cloth trim from disposable diapers, turn it into a new yarn and weave it into shoe fabric."

Although it sounds like a lot of garbage, the shoes don't stink. Not only do they look good, they're a step in the right direction for helping the planet.

Story suggested by Candace Brewer, Harrod, OH.

Zoo Doo

Lots of people are saying, "I doo." Nope, they're not newlyweds—they're gardeners! And they love Zoo Doo, a fertilizer made from zoo-animal manure.

Gardeners aren't the only ones wild about this new, all-natural product. Zoo keepers are, too. Until recently, they had a huge problem getting rid of piles and piles of manure from elephants, rhinos and other animals.

"We were transporting all of it to the city landfill," says a San Diego Zoo grounds keeper. "We averaged about three tons a day."

PHOTO COURTESY ZOO DOO COMPOST COMPANY



That's a lot of manure!"

But now zoos can sell the smelly stuff, rather than pay to dump it in landfills.

Zoo Doo, the compost company in Memphis, TN, buys the manure and lets it decompose for six months. By that time, it looks like ground-up coffee and has no odor.

At least not to *people*. But it still scares off deer and rabbits. What keeps these garden pests away for good? Siberian tiger manure. P.U.!



Green Thumb

Don't be surprised if you see plastic potatoes and corn sprouting up in farmers' fields some day. You won't be eating these veggies. But you may be buying plastic products made from them.

That's because a team of scientists at Michigan State University has figured out how to grow plastic inside plants! The plastic can be used to make disposable diapers, bottles and other objects. What's more, the plastic is biodegradable. (Most plastics now are made from petroleum and take a long time



to break down—if ever.)

To grow their own plastic plants, the scientists took genes—which help determine physical characteristics—from a certain kind of soil bacteria. (Believe it or not, this bacteria grows a natural kind of plastic.) Then they put the genes into a weed. Soon, plastic was grow-

ing inside parts of the weed.

The scientists think they'll soon be growing plastic inside other plants, such as corn. If that happens, who knows? Our Corn Belt might become the Plastic Belt!

Story suggested by Benjamin Francisco, Oak Park, MI; and James Winter, Wyncote, PA.

Red Alert

Beach lovers just want to have sun. But now there's a way to make sure they don't get too sun-kissed.

A patch, called Sun Alert, warns them when it's time to head for the shade. It measures the amount of ultraviolet (UV) rays from the sun, which can cause sunburn and skin cancer.

Here's how it works: The stick-on patch is worn on the skin or clothes. On the patch is a picture of the sun. The picture has been treated with chemicals that react to sunlight. As the patch absorbs UV rays, the sun changes from blue (no danger) to yellow (caution) to orange (burn).

The color-coded "fire alarm" sounds like a bright idea. With the ozone layer getting thinner, it just might save our skins!



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ANY QUESTIONS?

By Kathy Vitton

WHERE

DOES THE WAX GO WHEN A CANDLE BURNS?

Once a candle starts burning...presto! Some of the wax seems to disappear into thin air.

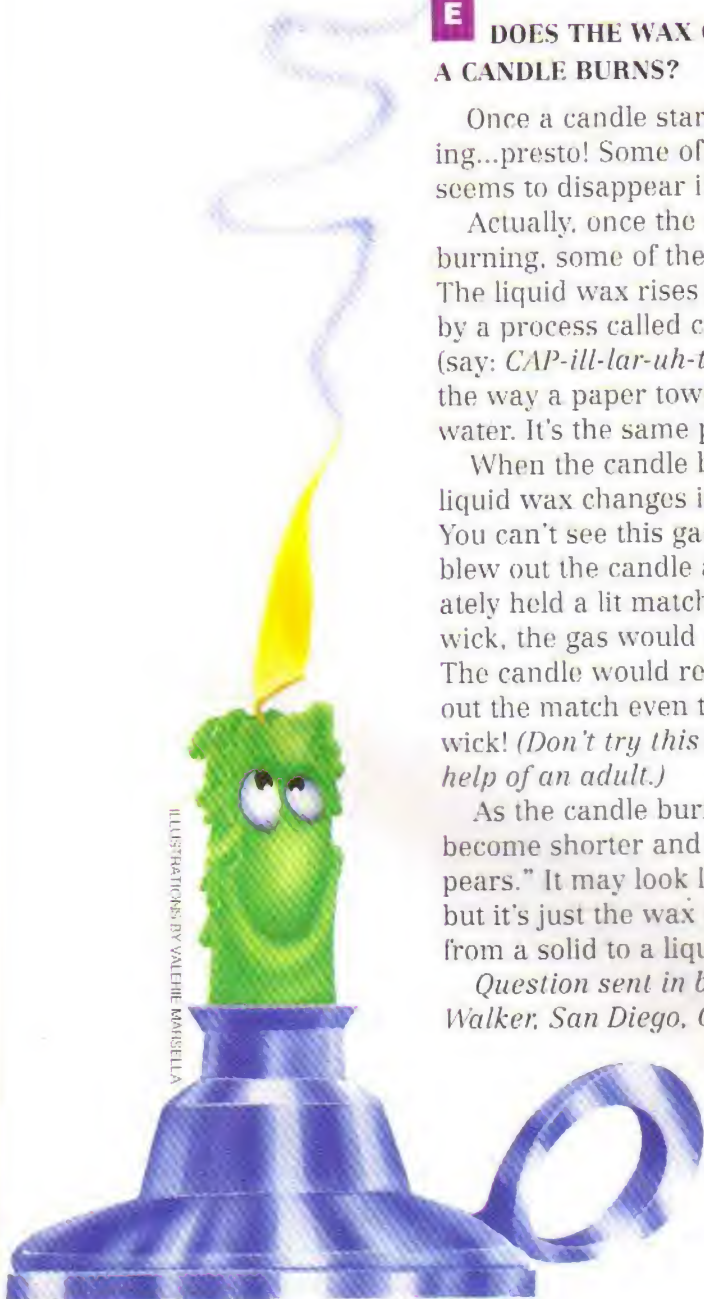
Actually, once the candle starts burning, some of the wax melts. The liquid wax rises up the wick by a process called capillarity (say: *CAP-ill-lar-uh-tee*). Think of the way a paper towel soaks up water. It's the same process.

When the candle burns, the liquid wax changes into a gas. You can't see this gas. But if you blew out the candle and immediately held a lit match near the wick, the gas would catch fire. The candle would relight—without the match even touching the wick! (*Don't try this without the help of an adult.*)

As the candle burns, it does become shorter and "disappears." It may look like magic, but it's just the wax changing from a solid to a liquid to a gas.

Question sent in by Andrew Walker, San Diego, CA.

ILLUSTRATIONS BY VALENE MARSELLA



WHAT

IS THE DIFFERENCE BETWEEN A MAMMOTH AND A MASTODON?

To tell the "tooth," it's not so tough to tell them apart. Mastodons and mammoths have different tusks, teeth and jaws.

A mastodon is part of a large group of extinct, elephant-like mammals that lived 35 million years ago. Mastodons get their name from their teeth. The cheek teeth are called mastodonts. These teeth helped grind up food.

Some mastodons had not one, but two pairs of curved tusks: one pair in the upper jaw and another in the lower jaw.

Mammoths, on the other hand, are closely related to modern elephants. They appeared 25 million years ago. Mammoths had shorter jaws than the mastodons.

Most mammoths had bigger tusks than the mastodons, though. Some mammoths had curved tusks more than 13 feet long. Now *that's* mammoth size!

Question sent in by Kerri Coleman, Layton, UT.



WHY

ARE TWO EYES BETTER THAN ONE?

The better to see you with, my dear! Your two eyes help you judge depth, or how far away an object is.

Your eyes are placed close together in the front of your face. There's a reason for this: Each eye sees the same object—but from slightly different angles. (To prove it, hold a pencil in front of you. Close your left eye. Look at the pencil. Then open your left eye and close your right one. You'll see that the pencil has "moved.")

That way, when you look at an object, you see two images—one on top of the other. Your eye muscles and nerves send information about the position of each image to your brain. Your brain then judges the distance of the object. This 3-D vision is called stereoscopic vision.

So why are two eyes better than one? Try this experiment with a friend to see for yourself: Play catch with a Ping-Pong ball. With both eyes open, try catching the ball 15 times with one hand. Then try catching the ball 15 times with one eye shut. You'll probably find it tough to keep one eye on the ball.

*Question sent in by Mathew
Schonberg,
Rochester, NY.*



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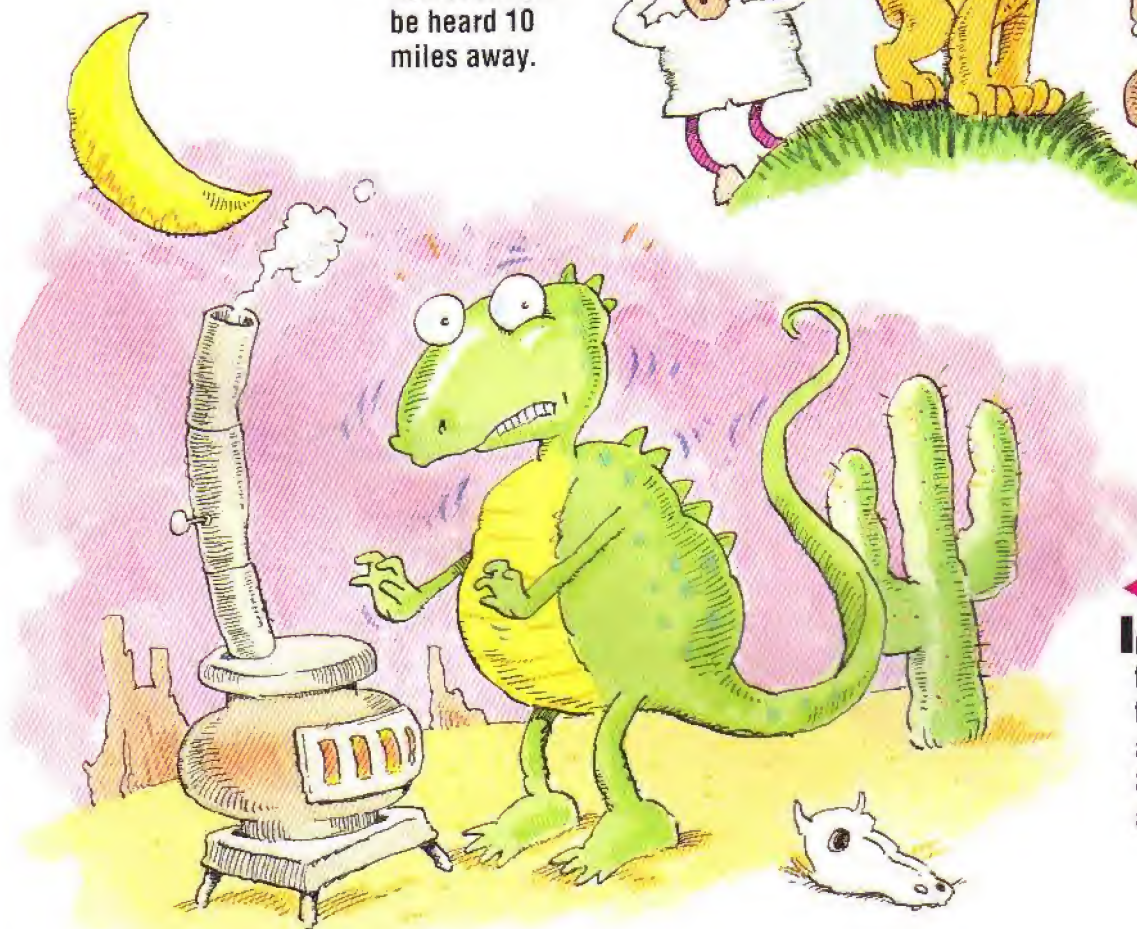


FACT

▲ A bee's buzz is caused by its wings flapping at the rate of 250 times a second.



▲ In the jungle, a lion's roar can be heard 10 miles away.

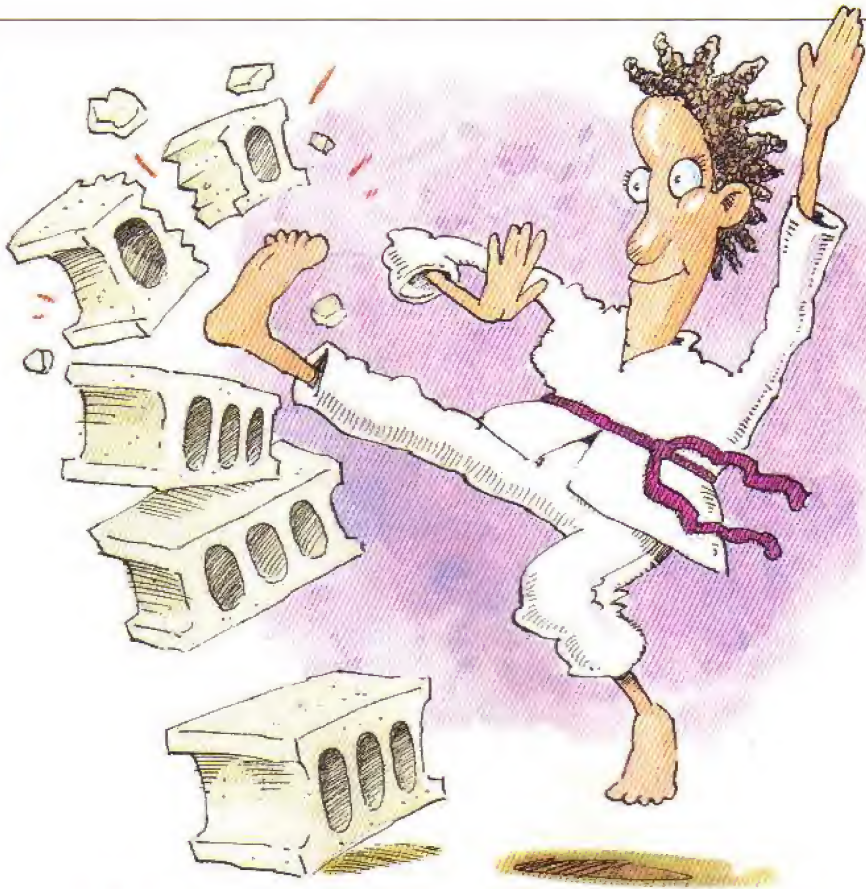


▲ In the desert, the temperature drops as much as 80 degrees F. at night.

Olds



▲
Comets—once thought to be giant snowballs—are really frozen balls of mud.



▲
Human thigh bones are stronger than concrete.



▲
Most Americans eat 40 tons (80,000 pounds) of food during their lifetime.

SCIENCE D

IT'S NOT JUST A

A huge block of dry ice—frozen carbon dioxide—sits on a rock outside a Mexican cave. At minus 270 degrees F., the dry ice sends up clouds of thick vapor.

Dimly visible through this vapor is scientist Terry Fredeking. In one gloved hand, Fredeking holds an eyedropper. In the other, he clutches a squirming, screaming vampire bat!

Suddenly, Fredeking notices that the fog is curling down into the mouth of the cave. He screams for his assistants to come out at once.

"This vapor can suffocate you," Fredeking explains.

His assistants hurry out of the cave. They are wearing gas masks. They are also carrying more screeching bats, which they have trapped with butterfly nets.

Just then, a man on horseback gallops out of the jungle.

"The rider takes one look at

us," recalls Fredeking with a chuckle, "turns his horse around and skedaddles back into the jungle as fast as he can!"

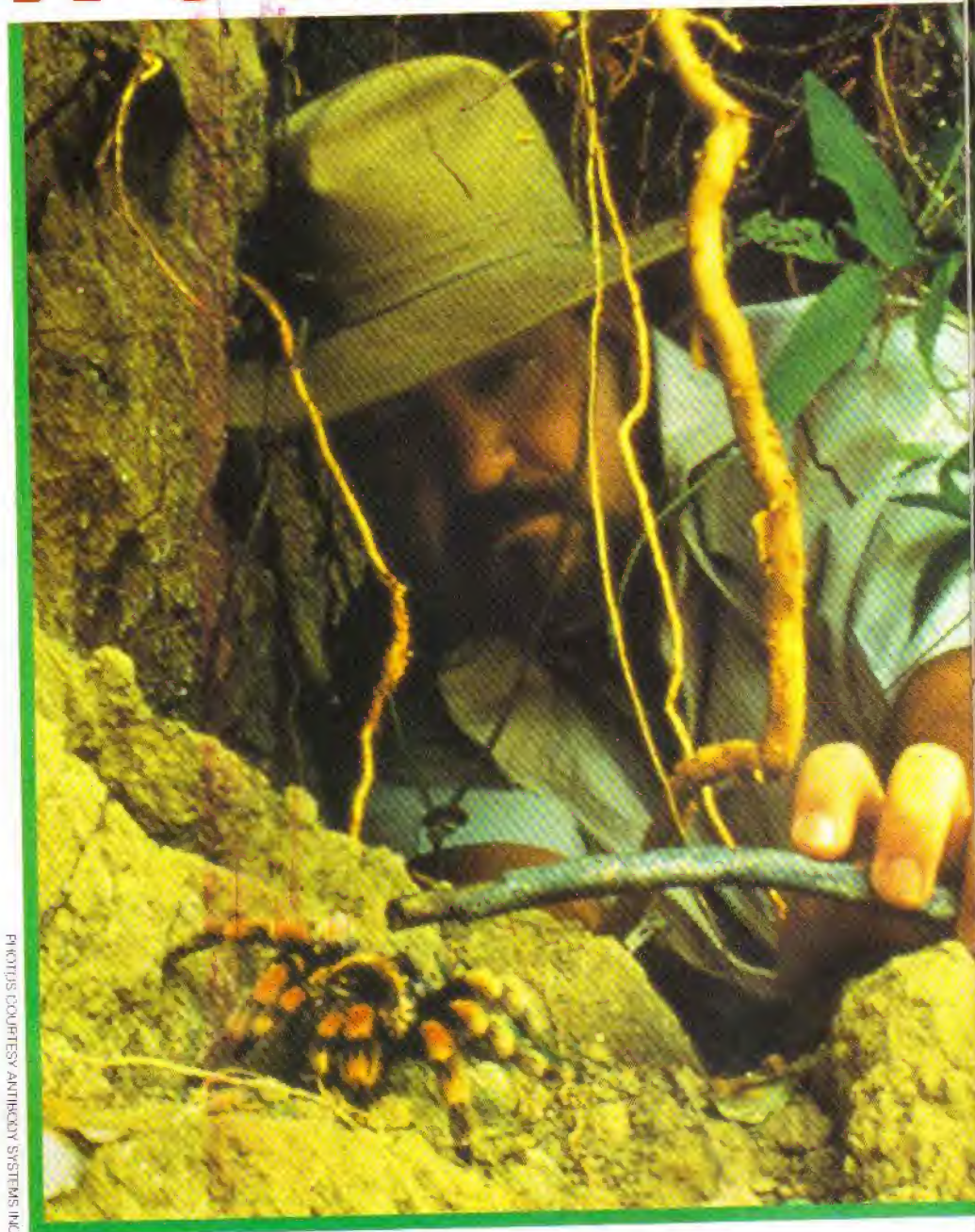
Why? "It took us a while to realize what the scene must have looked like to this guy. The vapor, the gas masks, the screaming

bats—he must have thought he wandered into a horror movie!"

Playing Hard to Get

For people less brave than Terry Fredeking, his daily tasks do sound like something from a horror movie. A blood specialist,

PHOTOS COURTESY ANTHROPO SYSTEMS INC



ARE DEVIL

JOB •

By Eric Weiner



IT'S AN ADVENTURE!

Fredeking runs Antibody Systems, Inc. This Texas company provides other scientists with hard-to-get natural substances needed for medical research.

And when we say hard-to-get, we *mean* hard-to-get.

During Fredeking's 20-year career, he has collected such things as 10,000 venomous black widow spiders (he had to hunt them at night, crawling around the woods with a flashlight and tweezers). He has wrangled deadly skin parasites, rattlesnakes, poisonous scorpions and 18-inch-long Amazon leeches. "These bloodthirsty worms can suck you dry!" Fredeking told CONTACT.

And then came the call for vampire-bat saliva.

"A drug company was working on a drug for heart attack victims," explains Fredeking. "The company wanted some-

thing that would make your blood thinner and would instantly dissolve any blood clots in your heart."

Blood-drinking creatures, such as vampire bats and giant Amazon leeches, inject their victims with such a chemical—it keeps their prey's blood flowing freely.

If scientists could collect enough of the animals' saliva, they could make a duplicate copy of the chemical in the lab. Then they could develop and test out the new medicines on humans. Eventually—if everything worked according to plan—the scientists might save thousands of lives.

But first, the lab needed the saliva...

Step One: Research!

So the drug company called Fredeking, whose answer is always the same. "He'll say, 'We can do it!'" says Dr. George



▲ West Texas tarantulas can jump six feet high. Fredeking wants it to jump on the stick—and not on his face!

▲ Back at the lab, Fredeking removes the tarantula's venom. It'll be made into a drug to help nerve damage.

Siber. Dr. Siber is a medical researcher who has called on Fredeking in the past. "And boom! He's off and it's done."

That's how it may seem to Fredeking's clients. But actually, Fredeking carefully prepares for every mission with a great deal of research.

"Before I go into the jungle, I have to find out everything I can about the creature I'm going to trap. It's the only way. When you're in the wild, you can't just go to the store and pick up whatever it is you forgot to bring."

Through his research into vampire bats, Fredeking learned that almost all of these bats carry rabies. (Rabies is a deadly disease caused by a virus. People and other warm-blooded animals can get rabies if they are bitten by an animal that already has the disease.) So he knew to bring along a large supply of vaccine to cure rabies.

He also found out that the Mexican army had been pump-

ing poisonous gas into the vampire-bats' caves. The bats had been giving rabies to cattle. So they wanted to kill off the bats.

"There's not a lot of wind in those caves," notes Fredeking. "The army thought there might still be some deadly gas around. So the next thing I ordered was a batch of gas masks."

Fredeking's research turned up another danger. As the bats hang upside-down from the cave ceiling, their droppings, known as guano, collect on the cave floor. A fungus grows on this dropping. The spores, or reproductive cells, of this fungus float through the cave air.

"If you breathe in these spores, you'll get a serious disease, but you won't know it. You'll be fine for a year," he says. "Then you'll die."

In addition to poison gas and killer fungus, Fredeking and his team also had to worry about getting rabies from the bats.

"When you stir up 20,000

bats in a small space, you can be pretty sure one of them is going to try to get you!"

So, despite the tremendous heat in the caves, the scientists all wore heavy gloves and thick coats. Amazingly, only one crew member got bitten.

"He was coming out of the cave carrying a bat," Fredeking remembers. "As he came out, he took off his gas mask. The bat broke free and struck him in the face. Vampires have razor-sharp teeth and those teeth raked across his skin. I whipped out our emergency medical kit, ripped off the man's coat, rolled up his sleeve and whacked him with a vaccine shot right then and there."

Then there was the problem of making the vampire bats drool so they could bring back enough saliva to make the blood-thinning drug. "We found this drug that dentists give to patients who are having trouble salivating. We'd put a little on



▲ To capture Mexican leeches, Fredeking and his team get their feet wet. The leeches immediately grab onto their legs.

▼ Before the leeches suck their blood, the team peels them off with a machete—then brings them back alive.



▲ Fredeking takes saliva from the leech's tongue. The saliva is made into a drug to dissolve blood clots.



◀ This team of “batmen” wears gas masks to protect them from deadly gases and fungus.

▼ The eyedropper gets a mouthful—of bat spit!



the tongue of a bat, then catch the spit in an eyedropper and drop it right onto the dry ice.”

The dry ice instantly froze the spit, keeping it fresh for the scientists back in the U.S.

Dodging Bullets

But it's not just bats that Fredeking has to battle. He has even been in the middle of a war!

Once, in El Salvador, a nation in Central America, Fredeking and a teammate were searching for a parasite. (A parasite is an organism that lives off another animal.) They returned from lunch to find that rebel soldiers had overtaken their hotel. All around them gunfire crackled.

“You know,” said Fredeking to his teammates, as calmly as he could, “this parasite is also found in Guatemala. What do you say we go there?!”

Fredeking is a lifelong animal lover. He makes his already-dangerous job still harder by using only humane traps. These traps don't hurt the creatures. Instead,

they keep them healthy—and ready to hurt Fredeking!

But for Fredeking, the danger is well worth it. For one thing, he knows that his wild hunts have helped other scientists develop many lifesaving drugs, as well as antidotes (cures) for various bites and stings—from black widows to rattlers. For another thing, there's the adventure.

“I grew up near Fossil Creek in Bedford, Texas,” Fredeking recalls. “Even as a kid, I used to love going out in the woods and bringing home poisonous snakes and squirrels. Once I brought home a wild hawk!”

Fredeking would love to have pets, but he's not home often enough. He's out of the U.S. more than half of the year.

Having lived a life more action-packed than an Indiana Jones movie, Fredeking is loaded with wild stories. Such as his next assignment.

“We have to gather this rare skin parasite that's found on only one creature in only one spot in the world. Guess where? It turns out the parasite only lives on the Tasmanian devils, in Tasmania, off the coast of Australia.” Tasmanian devils are fierce, badger-like animals.

The excitement in Fredeking's voice grows as he describes his mission.

“Now, see,” says Fredeking happily, “these devils are real killers...” ♦

SO CLOSE TO STARS

It's out there! Since 1990, the Hubble Space Telescope has been circling Earth. About the size of a school bus, this 12-ton telescope is exploring the solar system, stars and galaxies. And it has been sending back some fantastic photos.

At first, Hubble was in big trouble. Its main mirror, which collects light from objects in space, didn't work correctly. And the solar panels that give power to Hubble shook. The result? Blurry pictures. So astronomers and engineers came up with a temporary solution. Using a computer, they cleared up Hubble's photos. Next year, astronauts on board the shuttle *Endeavour* will travel into space to try to fit Hubble with a new lens. This "contact lens" will help Hubble see things more clearly.

Despite its problems, the powerful telescope is allowing scientists glimpses of objects they can't see from Earth-bound telescopes. For example, distant galaxies that used to look like fuzzy blobs are now coming in clearer. The Hubble photos on these pages show some of the wonders of the universe as they've never been seen before.

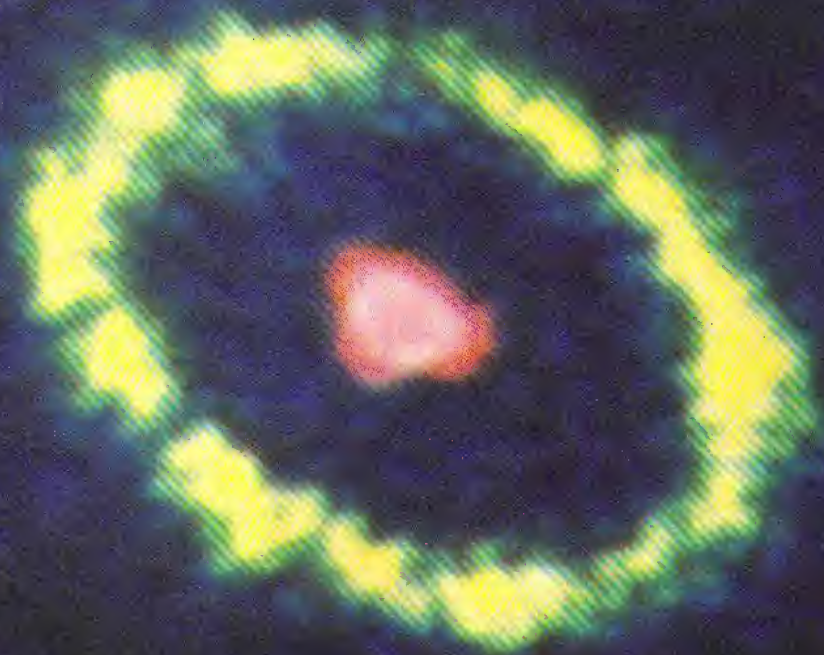
Hubble's Snapshots of the Universe

By Beth Chayet



It's a Gas Believe it or not, this may be a picture of how our solar system looked as a baby.

It's not a photo. It's an artist's drawing of a nearby star called *Beta Pictoris*. The artist used information from Hubble to draw the star. The drawing shows a disk of gas and dust in orbit around the star. The whirling gas and dust might one day come together to form planets. Scientists think this is how planets took shape in our solar system billions of years ago.



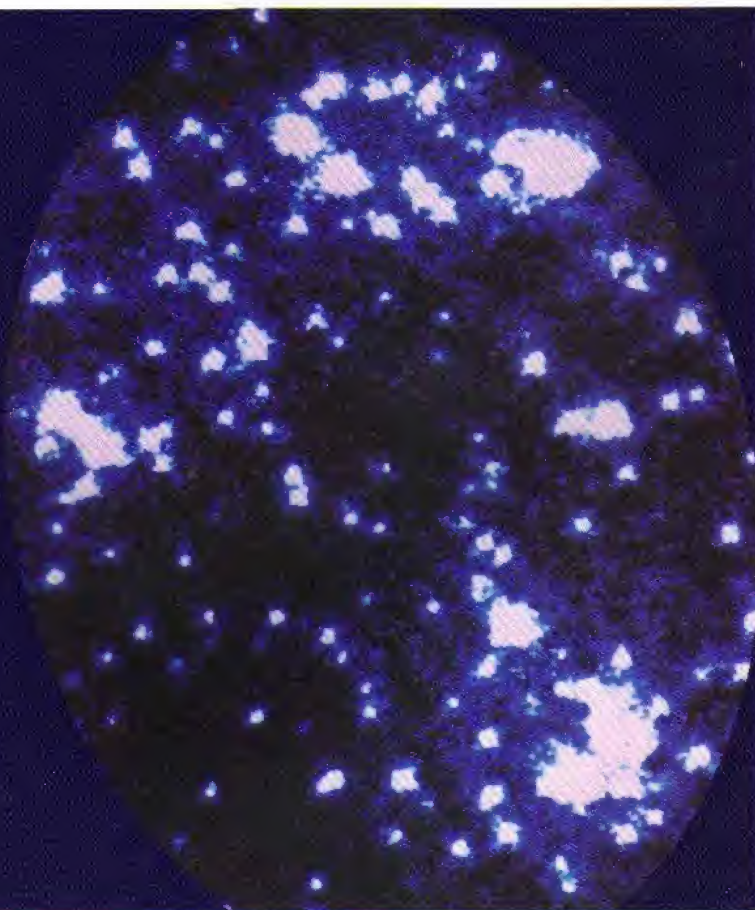
Ring Around the Super Nova

KABLOOM! One of the greatest sights in the universe is a star exploding. This happens when a star uses up its fuel. Right before a giant star dies, it becomes a supernova. It flares up until it's millions of times brighter than the sun. Then it burns out and

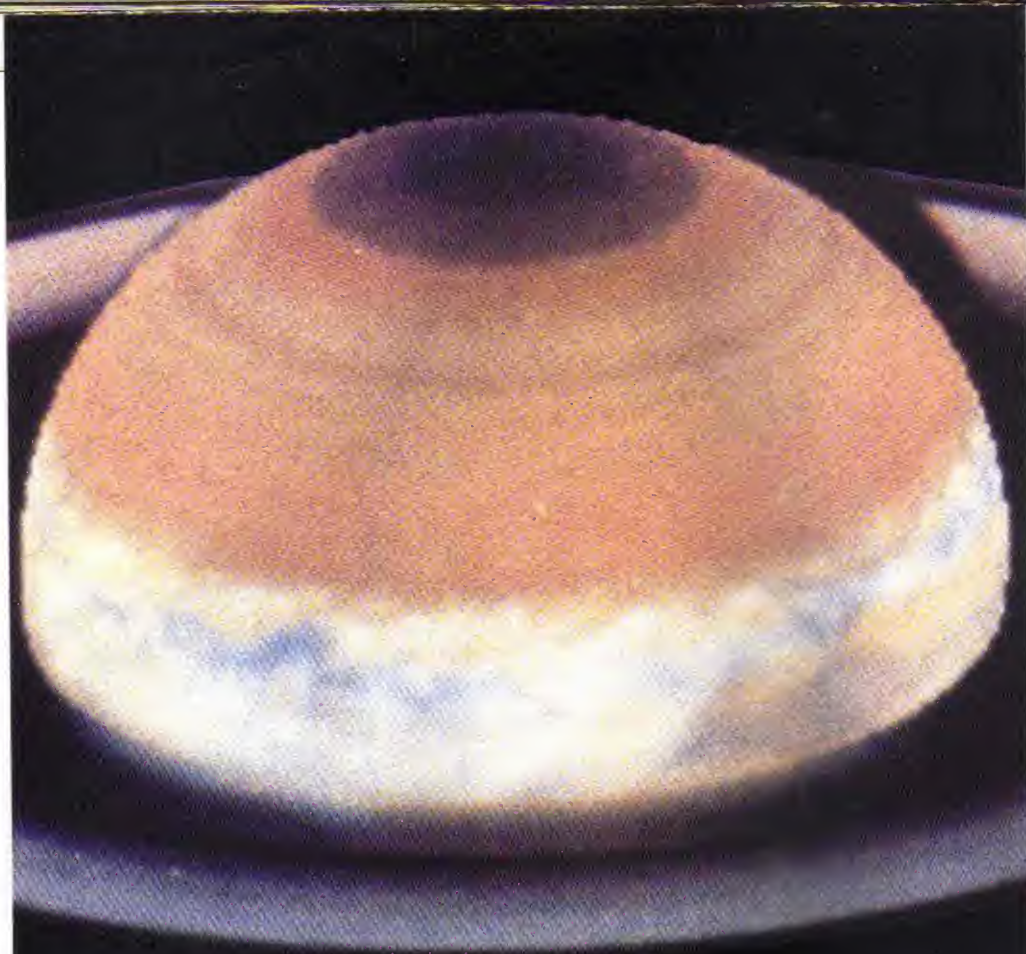
collapses. This Hubble photo shows a yellow ring of gas around pieces left over from a supernova (the pink blob in the center of the ring). The ring is 160,000 light years from Earth. (A light year is about 6,000 trillion miles.)

Star Search

Hubble has found some hot young stars. No, the telescope isn't pointing at Hollywood. It's watching a globular cluster—a group of hundreds of thousands of stars. These clusters were once thought to be made of old stars (stars between 10 and 15 billion years old). But this photo shows a cluster with at least 21 blue stars. Young stars are usually blue. Old stars are red. Astronomers now think the old stars in this cluster collided and became reborn as younger stars.



PHOTOS COURTESY NASA



Stormy Weather

If you think a hurricane is bad, get a load of this storm! The wide, white ring is a giant storm system circling the planet Saturn. The storm's winds travel at speeds of 22,000 miles per hour! Known as the Great White Storm, it takes place once every 30 years. By studying the way the storm moves, scientists hope to understand more about Saturn's atmosphere.





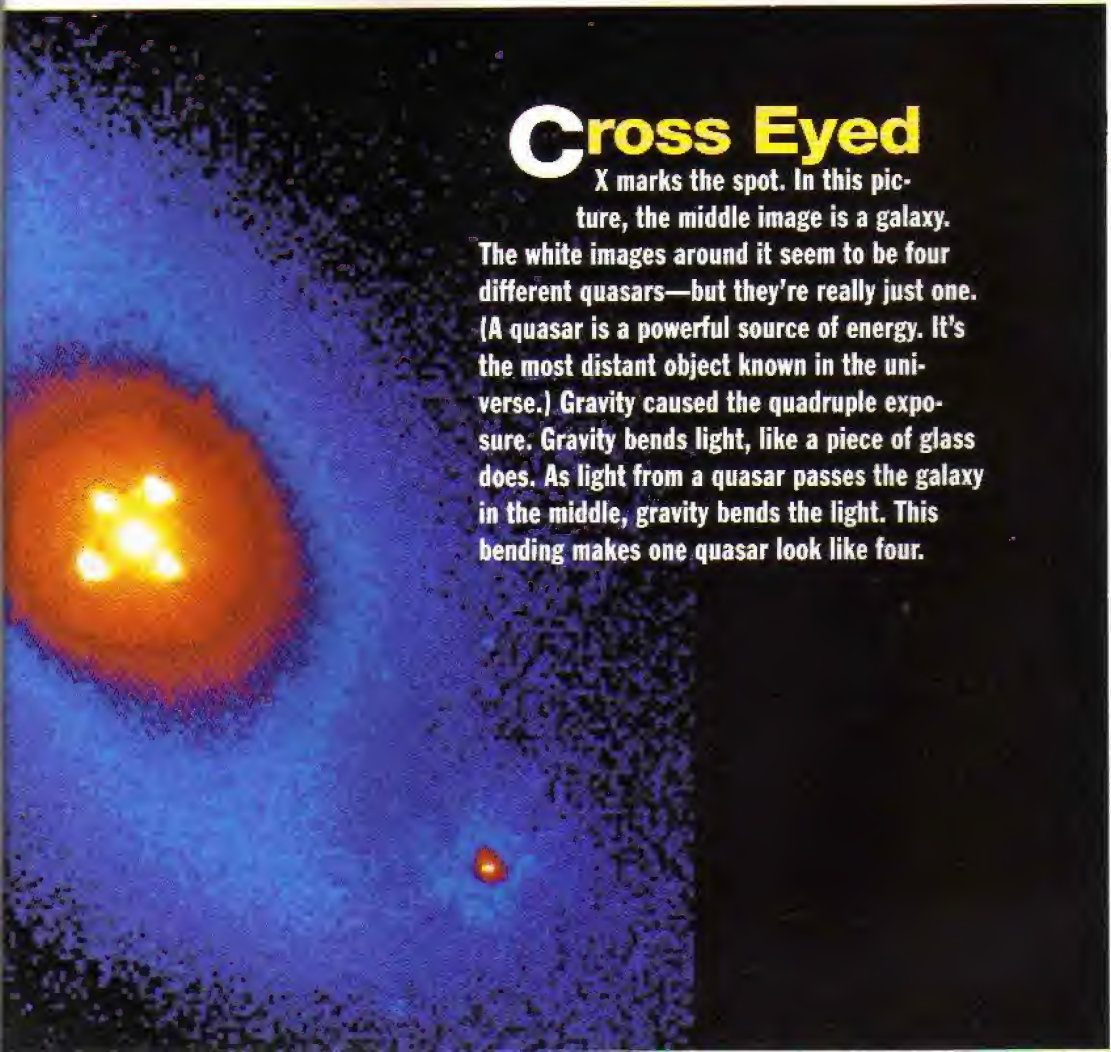
The "Hole" Truth

Hubble is getting the "hole story."

In the heart of a galaxy known as M87 are millions of stars, shining brightly in this photo. Why are they there? Scientists think the reason is a black hole at the center of M87. (A black hole is a place in space where giant stars have collapsed into a tiny

space. A black hole's gravity is so strong, it pulls in anything near it.)

These stars are possibly being sucked into M87's black hole. As they move to the center, the stars are shooting jets of gas (seen on the right side of the photo) more than 5,000 light years into space.



Cross Eyed

X marks the spot. In this picture, the middle image is a galaxy.

The white images around it seem to be four different quasars—but they're really just one. (A quasar is a powerful source of energy. It's the most distant object known in the universe.) Gravity caused the quadruple exposure. Gravity bends light, like a piece of glass does. As light from a quasar passes the galaxy in the middle, gravity bends the light. This bending makes one quasar look like four.

GRIN & BEAR IT

A CANADIAN TOWN'S UN-FUR- GETTABLE NEIGHBORS

By John Grossmann

The polar bear was coming towards us! This wasn't a zoo. This was the bear's home ground—the frozen land outside Churchill, a town in Manitoba, Canada.

The bear approached slowly, and everyone grew excited. A few dozen of us—polar bear lovers from all over the world—awaited just this moment. Cameras ready, we were warm (well, warm enough) inside a special vehicle called a Tundra Buggy. A Tundra Buggy has huge tires that don't damage the delicate Arctic environment. They also keep the buggy from getting stuck in snow or mud. Through its big windows, people can see polar bears—the huge and beautiful creatures the native Eskimos named Nanuk.

Suddenly, the bear rose up on its hind legs and placed its paws on the side of the Tundra Buggy. It peered in the window at us. Everybody cheered and cameras clicked pictures. When the bear lowered itself back down, there was a small wet circle on the window, where its nose had been.



A polar bear takes an Arctic stroll.

When charging a prey, it can run as

fast as an Olympic sprinter.

Churchill is famous for such close encounters with polar bears. Located on the western shore of Hudson Bay, Churchill calls itself The Polar Bear Capital of the World. And it is. Every summer, hundreds of polar bears hang out near this small town. They swim ashore in late spring when the ice on the bay—their winter home—begins to melt and break apart.

Bear Necessities

Why do they come to Churchill? Because it's where the water first re-freezes in winter. The bears know they can cross the ice and get back to their seal-hunting grounds. In fact, they can't wait to leave Churchill: By the time winter rolls around, they will have gone without eating for six months! (Bears live off fat stored in their bodies.)

The water around Churchill turns to ice around Halloween. That's when the bears begin gathering along the shore, patiently waiting for an Arctic cold front to blow in. It's also when scientists and

tourists seem to outnumber the 1,000 people who live in Churchill year-round.

Living with polar bears is a way of life for the townspeople of Churchill. Turn on the TV and a local cable station will remind you, "Remember, it's against the law to feed a bear." There's even a special telephone number to call if you see a great white roaming the town: BEAR-2327.

Lily McAuley raised six children in Churchill. She recalls hanging wash one summer in the backyard and seeing a bear headed for the front yard. That was where one of McAuley's babies was sleeping. Screaming, she ran to the front yard, grabbed her daughter and rushed inside. Fortunately, the bear was probably as scared as she was. It wandered off without hurting anyone.

"You learn to become bear smart," McAuley says. She taught her kids to talk to themselves when they walked alone, or to make some kind of noise—you don't want to surprise a bear. McAuley also told her kids to do just the opposite of what

PHOTO © JOHNNY JOHNSON/ANIMALS ANIMALS



PHOTO © WOLFGANG KATHLER/ALISTOCK



PHOTO © DAN GURAVICH/PHOTO RESEARCHERS



Tourists fly to Churchill from as far away as Japan to get up-close and personal with polar bears.

In Churchill, you always have to look for "signs" of great whites—they're beautiful but dangerous!

most parents would advise their children. "Walk in the middle of the streets," she told them. That way they'd stay out in the open and away from bears.

Another person from Churchill, Dwight Allen, remembers running from a bear when he was about eight or nine. He ran right into a stranger's house! Allen learned early the warning signs of a bear about to attack. "If a polar bear hisses or blows out air, you run," he advises

In Churchill, polar bears hunt through garbage cans and search through dumps. They might even wander down main street. On Halloween night, people circle the town with cars. They turn on the cars' headlights to scare off bears. That allows kids to trick-or-treat without worrying too much.

If they're not disturbed, polar bears usually don't attack humans. Still, since 1968, polar bears have killed two people in Churchill. In recent years, wildlife officials have set traps to catch bears close to town. They take captured bears to one of 21 holding cells in a building nicknamed the Polar Bear Jail. The bears are well taken care of, then released when Hudson Bay freezes over.

Tourists have been coming to Churchill to spot



PHOTOGRAPH BY WOLFF/ALISTON

Polar bears are terrific swimmers. Some have been known to swim 60 miles without stopping.

bears for the last 10 years. Scientists have been coming since the 1960's. Then, there were fears that polar bears were becoming extinct. So scientists wanted to study the polar bear population.

Bear Facts

No one is sure, but scientists believe there are from 20,000 to 40,000 polar bears in the northern Arctic (no polar bears live in the Antarctic regions). So they aren't an endangered species.

Although known by the nickname "great white," few, if any polar bears are pure white. Most appear off-white, or slightly yellow. Some even look light brown. This may be because they are related to brown bears.

Scientists believe that 100,000 to 200,000 years ago, brown bears may have taken to the ice in search of food. Over time, they developed lighter-colored coats that let them blend in with their sur-

Bear young follow their mother across the ice, imitating her actions.



PHOTOGRAPH BY BRAD/HAULTSTON

roundings. Being white made it easier for bears to sneak up on seals and other Arctic animals.

Bear Care

After first putting them to sleep with a tranquilizing dart, scientists have discovered a good deal about polar bears. For example, they can tell a bear's age by pulling a tooth and counting the growth lines—much as you can tell how old a tree is by counting the rings on a log. Some polar bears live to be 25 years old.

Scientists are very interested in the eating habits of polar bears. Full-grown males tip the scales in the range of 770 to 1,500 pounds. Their layer of blubber, which helps keep them warm, can be as thick as four and a half inches. They get this layer from eating the fat and skin of seals.

"We'd like to learn how the polar bear can put on so much weight and eat a diet so high in saturated fat and seem not to suffer ill health," says polar bear researcher Malcolm Ramsay.

Scientists also hope to learn more about how a polar bear can go for nearly a half year without eating—and without hibernating, the way black bears do.

"This is amazing," says Ramsay. "Because if you

or I decide to stop eating for so many months, within a short time our muscles would break down from lack of food and we'd be hospitalized."

Almost as incredible as a bear's appetite are its feet. A polar bear's feet are huge for its size. On land, they act like snowshoes. Some researchers are studying the bears' foot pads, or soles, for clues in designing better shoes for humans. In the water, these big feet work like flippers.

On water or land, polar bears are something to behold. Out the Tundra Buggy window, you can see mothers with cubs trailing behind. Sometimes the cubs sleep in a cute, furry tangle, using mom as a pillow.

Most exciting of all are the fights. Hungry male bears will circle a mother and cubs. The mother will hiss and run at the would-be attackers to defend her young. Bears also play-fight, as young bears stalk each other, wrestling and biting (but not too hard). It's their way of learning how to fight and of seeing who's strongest.

A good play-fight can last a half hour. Both bears get up on their hind legs for a clinch no human referee would break. When this happened on our Tundra Buggy trip, one woman couldn't resist saying, "That's what I call a *real* bear hug!" ♦

It's a good thing these guys are only play-fighting. Because polar bears hunt animals, their teeth and claws are especially sharp.



PICTURE PERFECT



WE'ALL
WALK ON
THE SAME
GROUND

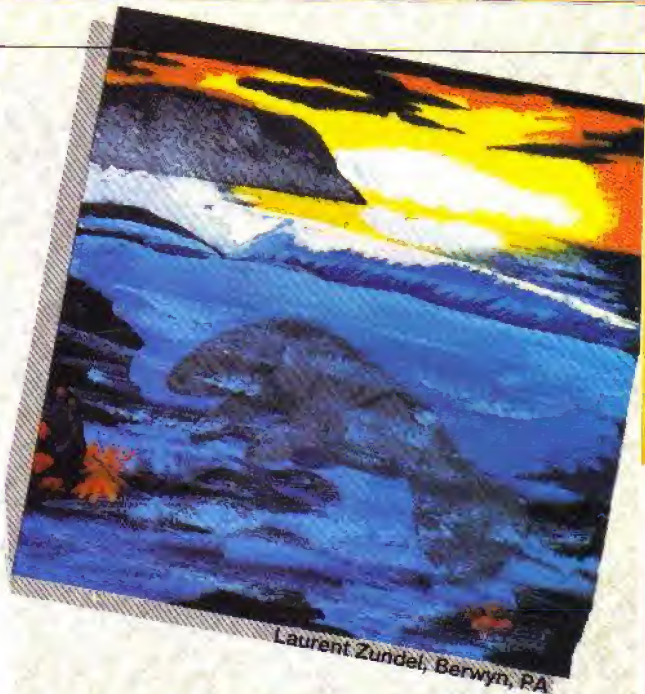
David Mitchell,



Amy Rader, Dalton, GA



Jason Duncan, Harrisburg, IL



Laurent Zundel, Berwyn, PA



Rory Heath Newell, Laguna Beach, CA

PHOTOS COURTESY TIMOTCA

In a perfect world, there would be no war, no pollution, no endangered species and no hunger. At least, that's how kids who entered a "Perfect Planet" T-shirt design contest pictured it. The contest was sponsored by the International Museum of Twentieth Century Arts (TIMOTCA) to promote world peace.

More than 3,000 kids, ages 5 to 18, entered the first annual art contest. The top 200 entries

are now on exhibit in children's museums across the U.S.

Araceli Montelibano, 12, is from Los Angeles, CA. She is this year's grand-prize winner. Her design, "I Care," is on T-shirts sold across the country. The money from the T-shirt sales is being used to help homeless kids and to help clean up the environment.

Here's Araceli in her T-shirt—plus a handful of the other winning designs. ♦



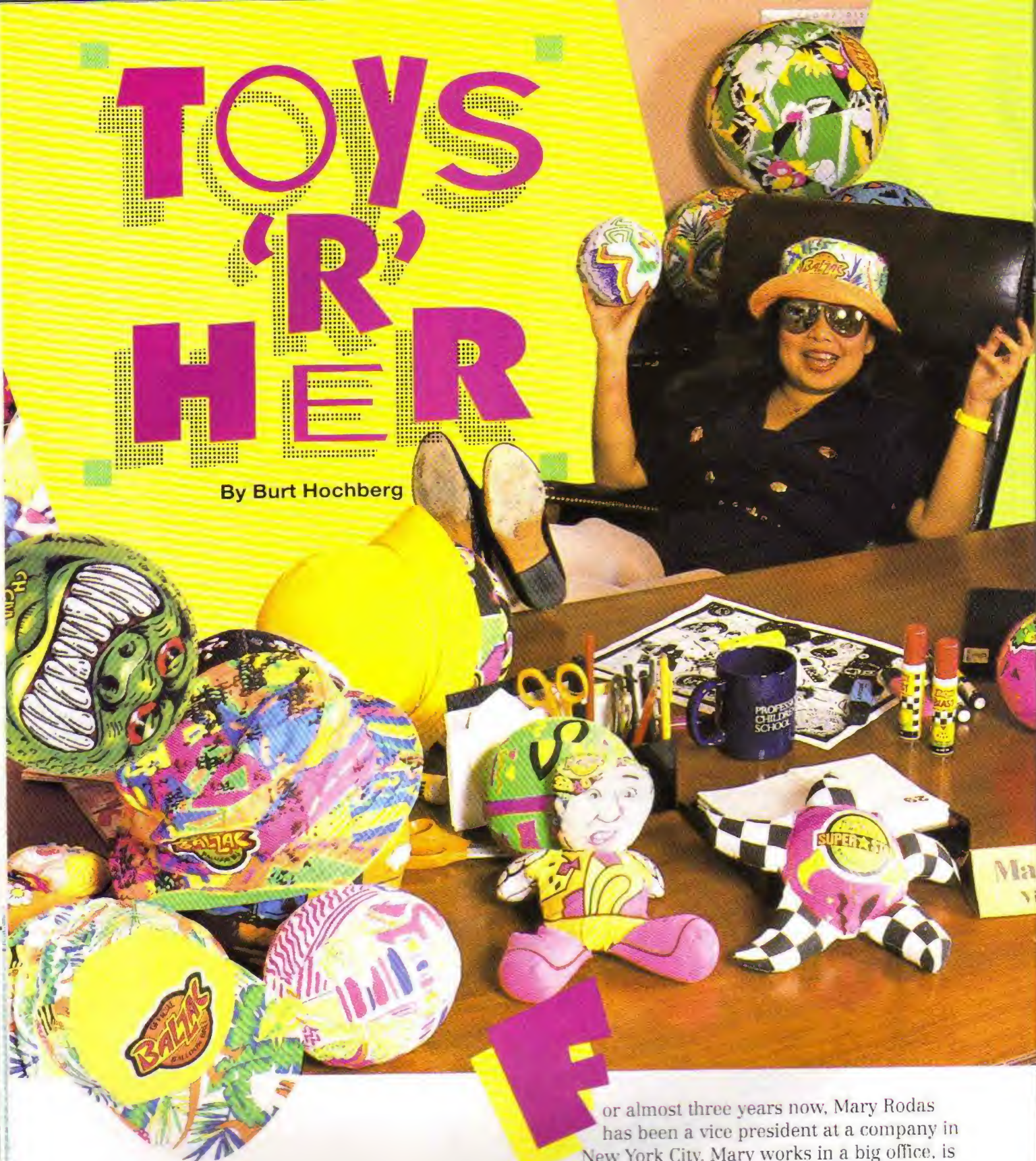
Ramsey Bodawi, Diamond Bar, CA

TIMOTCA is having a 1993 T-shirt design contest. It's open to all kids ages 5 through 18. To enter, submit an original design for a T-shirt. Your entry must be postmarked no later than March 13, 1993. Drawings should be based on one of the following topics: PYE's Perfect Planet; One World, One People; A Peaceful Planet; or Caring for the Earth. Your name, full address, telephone number, date of birth, and school name and address must be printed clearly on the back of the entry. Send entry to TIMOTCA, P.O. Box 427, Laguna Beach, CA 92652.

BACKGROUND PHOTOGRAPHY BY BRUCE MCANDLESS

TOYS 'R' HER

By Burt Hochberg

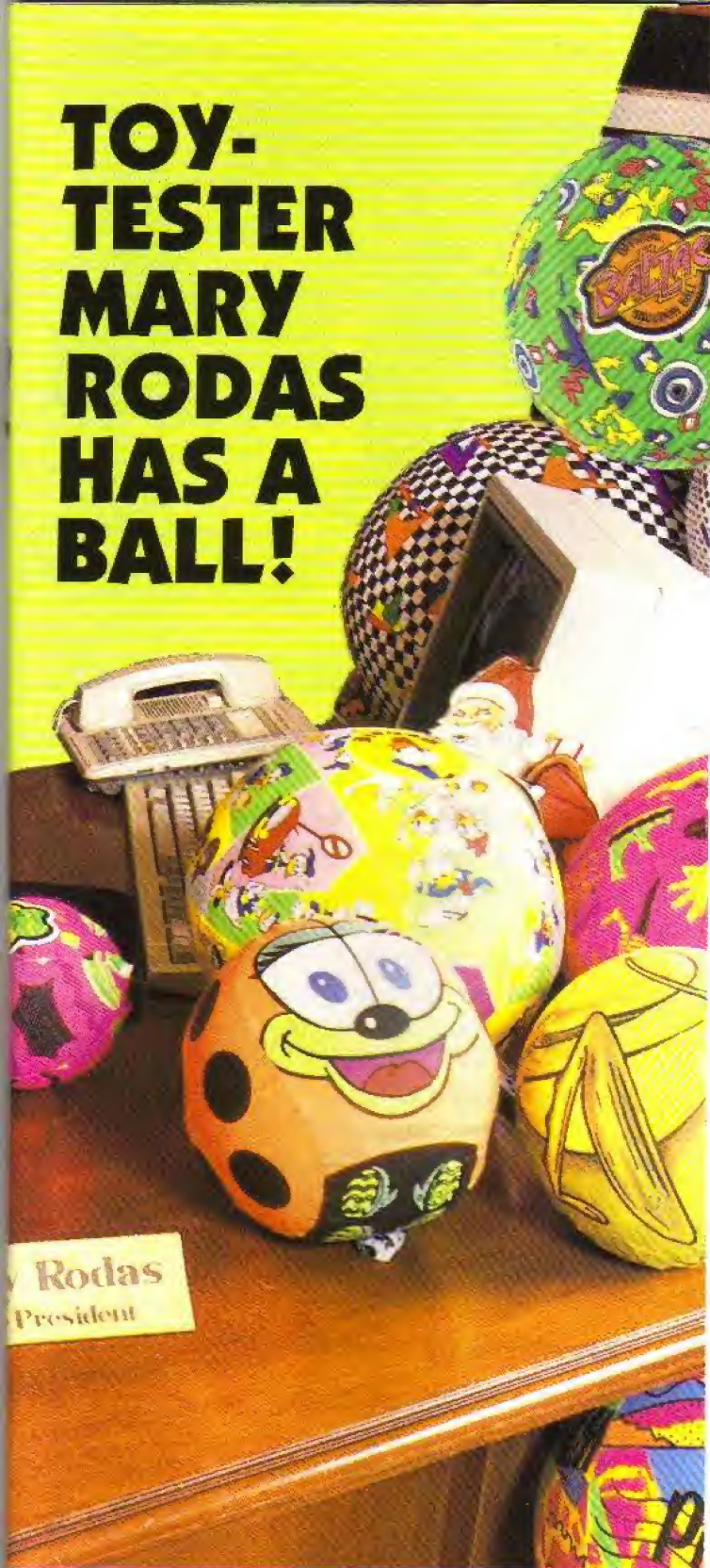


For almost three years now, Mary Rodas has been a vice president at a company in New York City. Mary works in a big office, is driven in a limousine and makes important business decisions.

But she still has to do her homework every day. That's because Mary is a 16-year-old high school student.

How did a teenager get such a grown-up job? It all started when she was a little girl in Union City.

TOY-TESTER MARY RODAS HAS A BALL!



PHOTOGRAPH BY BRUCE MCANDREWS

NJ. One day, she was watching her father, a building superintendent, help a tenant put in new tiles. Mary noticed that the tenant, Donald Spector, laid the tiles in the correct pattern everywhere but behind the kitchen door.

"Mister," she said, walking right up to him. "You're doing it all wrong."

"It's okay, Mary," Spector said. "Nobody will see the tiles behind the door."

"But it's wrong," Mary insisted. "You have to do

it right even if nobody sees it."

Spector was impressed she spoke her mind.

Mary and Donald Spector became friends that day, and it changed their lives.

Donald Spector is an inventor and one of the founders of Catco, Inc.—a company that makes toys. As Mary got a little older, Spector started to show her his ideas for new products. He wanted Mary's opinions. And she gave it to him straight.

"One of his ideas was an aroma disc player," Mary told CONTACT. "It works like a compact disc player. But instead of music, each disc has a different smell—like flowers or certain foods. It makes your room smell any way you want. When Donald asked me what I thought about it, I told him kids wouldn't like it unless he added some fun smells. So he added chocolate mints, buttered popcorn, bubble gum and other things. It was great."

Although Mary is in her teens, she has a high-pitched voice that makes her sound much younger. But everything else about her is very grown-up. She says she used to be shy, but when you meet her, you find that hard to believe. She is confident and direct and very sure of herself.

Playing Around

She has good reasons to be confident. Mary has come up with a lot of good ideas for Catco. Take, for example, Balzac. This is a cloth ball with a balloon inside it that can be filled with air or water. In 1989, it became one of the hottest toys in the U.S. But if not for Mary, it might have fallen as fast as a punctured balloon. It was her idea to fill a Balzac partly with water so that it would fly crazily when you threw it. And it was Mary who thought of putting pennies or rice inside so it would make noise when it bounced around. She also told Spector she didn't like its colors.

"I was 13 when Donald showed it to me," Mary says. "It was fun to play with, but I thought the colors were boring. I told him to use neon colors, and to put them in crazy, wacky patterns."

When Balzac hit the market, the results blew Spector away. It did so well, now stores are selling a whole bunch of Balzac products.

A couple of years ago, Catco was getting ready to introduce Pillokins, a new line of pillowcases shaped like animals for kids. When you stuffed a pillow in them, they became stuffed animals. One pillowcase was a girl dinosaur named Dina.

"It was designed by a famous fashion designer in Europe," Mary says. "There was, like, a mole on its face. Donald said it was a beauty mark. I

said, 'Beauty mark? That's a pimple.' Donald knew right away that people wouldn't buy it if they thought it was a pimple. So he made the dinosaur all over again."

Unblemished, Dina became one of the most popular Pillokins. Once again, Mary Rodas had saved the day.

Donald Spector knew how much Mary was helping his company. So on Christmas Day in 1989, which happened to be Mary's 14th birthday, he gave her a super present: He asked her to be Catco's vice president of marketing.

A 14-year-old vice president has problems that an adult vice president can't even imagine. School, for instance.

It's not a problem for Mary. She goes to the Professional Children's School in New York City. "It's a special school for kids who work during the day and can't go at the regular times," Mary explains. "The students are all actors and models. I'm probably the only executive in the whole place."

And for the busy executive who's still in school, technology comes in handy. "When I took a business trip to Florida, I still did my homework. I just sent it to school by fax."

Clothing, though, wasn't so simple.

"You can't go to work wearing jeans and sneakers. But the kind of clothes that grown-ups wear to the office look dumb on a 14-year-old."

During the school year, Mary spends between three and four hours a day at her job. In the summer, she works a little longer, but never more than



Mary helps an artist come up with a new product's design and colors.

about 20 hours a week. Although her job is important, she also needs to enjoy her life as a teenager. And she especially enjoys being with her family.

When she's not giving interviews and traveling to publicize Catco's products, most of Mary's time at work is spent with the new products her company is developing. She plays with the new toys to make sure they're really fun. And she's always ready to suggest how they can be made better.

"I do a lot of running around making sure everything's being done right. Maybe a doll will look better if its clothes are different colors. What I do is make sure that kids will like our products. Sometimes I hire other kids so I can get a better idea of what they like."

President Rodas?

Mary Rodas has done a lot in a short amount of time. What does she want to do next?

"I'm very happy working for Catco, but I want to go beyond it. Maybe I'll study political science in college and go into politics. I don't like the way society is going. I want to do something about it."

These words may sound strange coming from a teenager. But she feels strongly about it. Her voice becomes intense and she gestures with her arms.

"Maybe I'll run for President some day," she says. Don't think she won't.

But first she has to play with a few toys. ♦

It was Mary's idea to make this breath spray for kids taste like candy.



FULL SPEED AHEAD

A CONTACT ACTIVITY

Mary Rodas has a ball helping a toy company make some pretty funky toys. But who says she gets to have *all* the fun? With some stuff found around the house, you can make your own toy boat. The boat doesn't just float—it's water-powered!

What You Need

- an empty half-gallon milk or juice carton
- a plastic drinking straw
- a paper drinking cup
- scissors
- a bathtub filled with a few inches of water

What You Do

1. Cut the carton in half lengthwise. Be sure to leave the sides of the carton about three inches high all around.
2. Cut a small hole in the back or flat end of the carton. It should be just big enough for the straw to fit through.
3. Cut another hole for the straw in the side of the paper cup, near its bottom.
4. Place the cup in the middle of your boat. Poke one end of the straw into the hole in the cup. Slide the other end through the hole in the carton.
5. Fill the tub with a few inches of water. Put your boat in. The end of the straw should be underwater.
6. Hold a finger over the end of the straw that's underwater. Fill the cup with water. (Make sure the cup is in the middle of the boat.)
7. Now take your finger off the straw. Your boat will move across the tub full-speed ahead.

Why It Works

What gets this boat cruising is a law of motion. The law says that every action causes an opposite and equal reaction. The action, in this case, is the

force of the water escaping from the cup. This moving water causes the reaction. The reaction is the boat moving in the opposite direction of the flowing water.



THE TIME TEAM

Chilling Out

By Curtis Slepian

Sean Nolan tore open his Christmas present. It was a down coat. "Gee, it's...great," he told his parents. But Sean was a little disappointed. He really wanted the new Super Akido Computer Entertainment System. Oh, well.

Sean put on the coat and went over to Jenny Lopez's house. Bundled in a heavy winter coat, Jenny walked with Sean to the mall. "I hate cold weather," he said to her. "I wish I could go somewhere warm."

Sean was so down because of the weather and his present, Jenny felt bad for him. This was a first. Feeling in a holiday mood, she decided to give him a gift. She took her tachyon machine out of her coat pocket. The tachyon machine was a science fair project. It sent the teens to the past or future and always returned them to the time and place from which they left.

"Maybe my time machine can take us to a warm place," said Jenny.

"Cool!" said Sean. "I mean, warm."

Jenny groaned. "Make another bad joke and I'll change my mind."

The two teens walked to a supermarket parking lot. No one was around. Sean looked at a digital time/temperature sign and saw it was 28 degrees. "Man, I hope we end up somewhere tropical," chortled Sean, as Jenny hit the start button on the tachyon machine.

An instant later, everything went black. Then it went white. *Very* white.

As far as the eye could see, everything was ice. "Oh, no," moaned Sean, shivering. "This definitely isn't Miami!" An intense, cold wind knifed through their winter coats. The temperature must have been 40 degrees below zero.

The Big Chill

Jenny's fingers became numb. She dropped the tachyon machine into a pile of snow. Sean said, "Let's get out of here before we freeze to death!" But when she picked up the machine and pressed its start button, nothing happened.

"It's frozen, it won't work!" gasped Jenny. "This can't be happening!" They tightened their coats as best they could. But they might as well have been wearing shorts and T-shirts.

Teeth chattering, Jenny dropped to the rock-like ice and curled into a ball to stay warm. "Get up," cried Sean. "We've got to keep walking or we'll die!"

They stumbled ahead. Where there wasn't ice, there was icy water. The teens had to squint because the whiteness of the world hurt their eyes. Jenny started shivering. She put the tachyon machine in her pocket to warm it up. But it still wouldn't work. "I wish I'd never built this machine," she said, trying not to cry. If she had, her tears would have frozen solid.

Then she noticed something. "There are sled tracks and footprints in the snow!"

"So what?" Sean moaned softly.

Jenny answered, "We can follow the footprints. Whoever made them will save us."

They started following the footprints. The sharp wind burned their hands and faces.



And their feet were freezing.

They marched, slipping and sliding across the ice. In some places, the surface ice broke apart, leaving vast lakes of ice-cold water.

Suddenly, the wind died down and everything was silent. Then they heard a loud groaning noise. "Was that your stomach?" asked Jenny.

They heard another groan. The ice along the edge of the water was splitting! The cracks quickly grew until the ice they were standing on broke completely away from the main body of the ice. It began to float in the water, like a raft. It was carrying the teens away from the icy land.

"Quick," shouted Jenny. "Jump off the ice floe!"

The teens took a running start and leaped. They just landed on the edge of the solid ice.

"I hate this place!" screamed Sean.

"Chill!" said Jenny.

"What do you think I'm doing?" shouted Sean. Then, from fear and exhaustion, they both started laughing hysterically.

Hands buried deep in their pockets, the two teens picked up the sled tracks and footprints and kept walking. Sean stopped for a moment.

He thought he saw something. Miles away, black dots, like ants, moved up a snowy hill. "Look! People! We've found them!"

White Storm!

Their feet were so cold, the Time Team couldn't walk fast. Worse, the wind began to blow hard. Snow started to fall. A minute later, they were in the middle of a blizzard. The wind threw bits of ice through the air at high speeds. Sean touched his cheek. He saw his hand was red with blood. The wind had driven the ice into his skin!

They couldn't see a foot in front of their faces. "We've got to stop," shouted Jenny into Sean's ear. "Let's try to build an ice wall." Using chunks of ice scattered on the ground, they built a small wall to break the wind. They huddled behind it, listening in fear to the howling.

After an hour, the storm stopped. But snow now covered the footprints they had been tracking. "We've lost them!" said Jenny in anguish.

There were no landmarks in this white world. But Sean pointed and said, "I'm guessing, but I think they were in that direction."

Jenny shrugged. It was as good a direction as any. Before starting, she tried to get the





tachyon machine to work. The storm had frozen it worse than ever.

Sean's feet were so cold and numb, he was having trouble walking. The sun's glare was blinding them. But they soon had a bigger problem. Their path was stopped by a huge body of icy water. If they didn't cross it, they might never find help.

As they waited at the edge of the water, wondering what to do, clouds covered the sun. Snow fell. It became so cold, the water started to freeze right before their eyes. "We'd better try to cross the water before the sun comes back out and thaws it," said Sean.

The surface of the water was barely frozen. It crackled under the teens' footsteps. Halfway across, Sean's foot broke through the ice surface. He stopped, scared of falling into the deadly, cold water. Slowly, he took another step. The ice held! They both made it to the other side. "Talk about walking on thin ice," joked Sean, weakly.

Totally lost, the teens moved forward. As Jenny walked, she felt the ice shake. A deep crevice began opening under her. She lost her balance and fell into it. Just in time, she grabbed the top edge of the ice. Not seeing what was going on, Sean kept walking.

Welcome to the Gap

Jenny shouted for help—but the wind whipped away her words. Her fingers were sliding on the ice. She couldn't push herself up with her feet—the ice wall was too slippery. She was about to fall in when

a hand grabbed her wrist, pulling her up and clear of the gap. It was Sean!

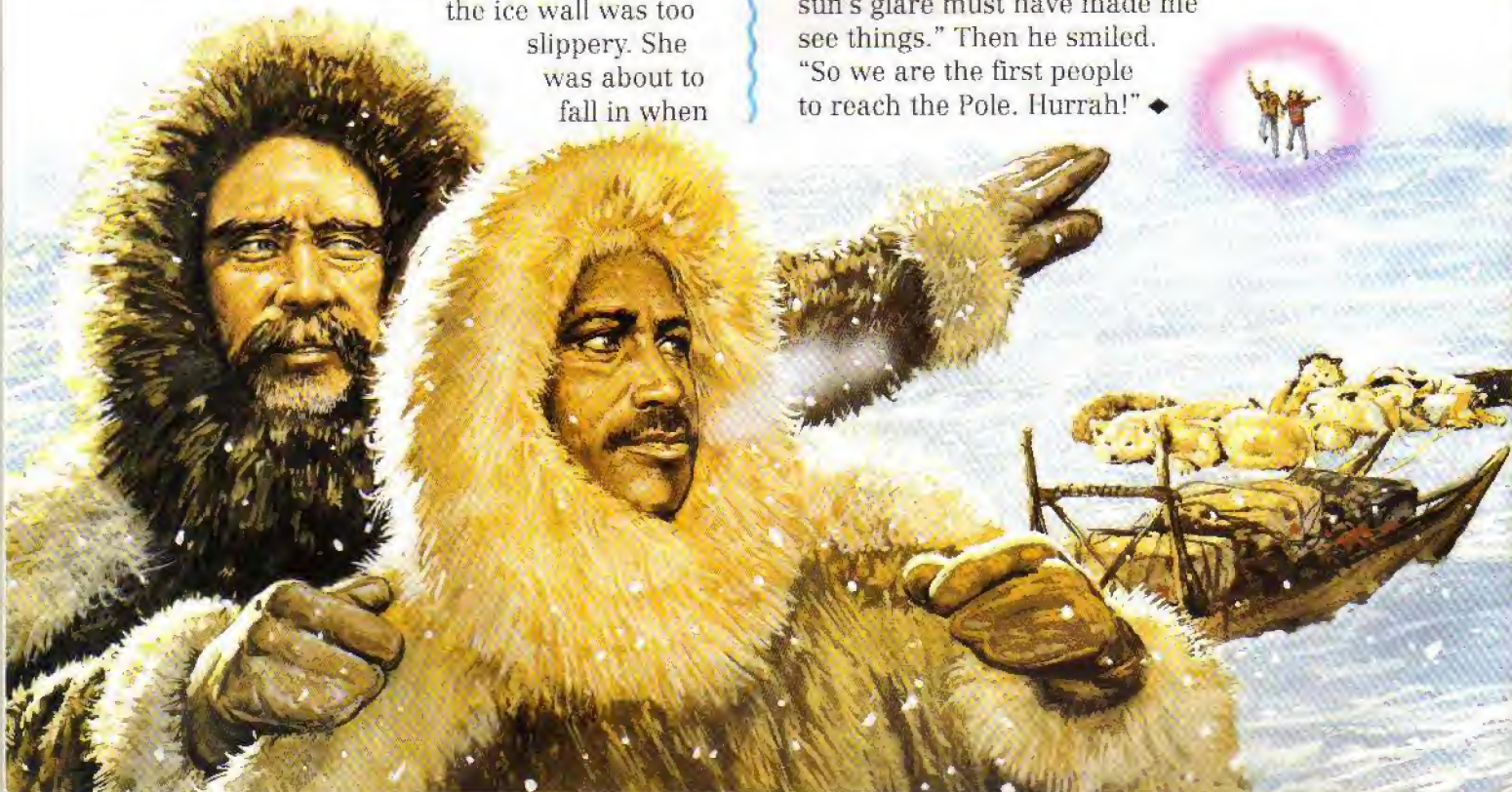
Jenny hugged him and Sean felt like a hero. But they both knew they were still in trouble.

At that moment, the teens were closer to help than they realized. Four people—two Inuits, or Eskimos, from Greenland and two Americans—were not far away. The Americans were Robert E. Peary and his assistant, Mathew Henson. For years, they had been trying to become the first people to reach the North Pole. And today, April 6, 1909, they were almost there.

Peary rubbed his eyes. To make sure he was standing at the 90th latitude—the very top of the Arctic—he got out his sextant. This was an instrument that told him his north-south position. Peering through it, Peary couldn't believe his eyes. He had seen two strangers in the distance. "Oh, no!" he gasped. "I've been beaten to the Pole by a boy and girl!"

Just then, Sean and Jenny were 100 yards away from Peary and Henson. "Hey, check this out," yelled Sean. "It's the dudes we've been searching for." But that moment, Jenny gave the tachyon machine another shot. She pressed its button. This time it worked: It sent the teens back to the deserted parking lot. It was still 28 degrees outside. "Now this is what I call warm weather!" exclaimed Sean, unbuttoning his coat.

Back on the North Pole, Peary rubbed his eyes and looked again through the sextant. "There's nobody there," he said happily to Henson. "The sun's glare must have made me see things." Then he smiled. "So we are the first people to reach the Pole. Hurrah!" ♦



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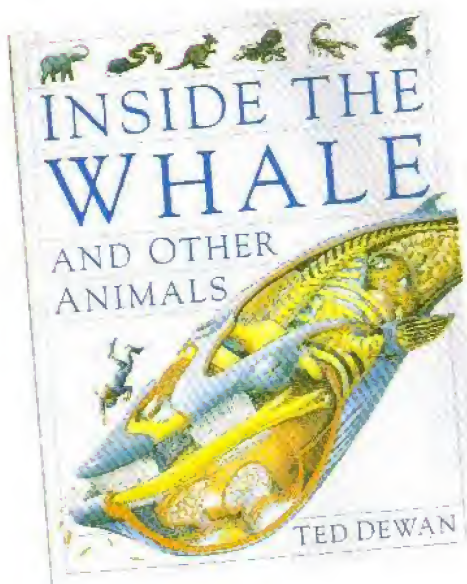
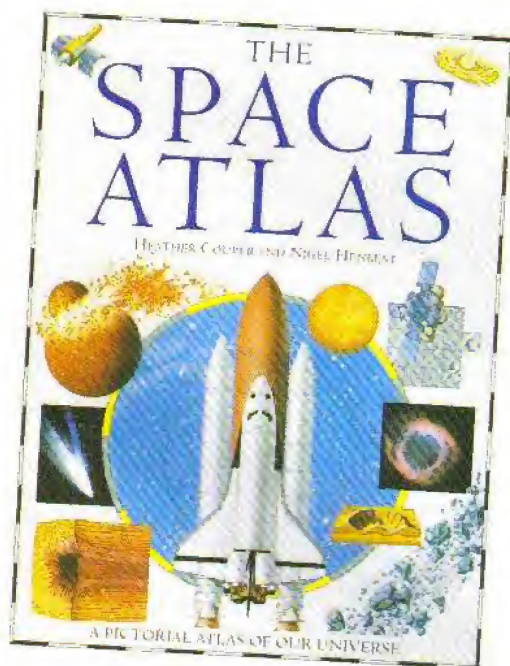
The Space Atlas

by Heather Couper and
Nigel Henbest

Harcourt Brace Jovanovich,
\$16.95

Ever wonder what happens to a star when it dies? Or which planet is the hottest? Then this guide to the universe is for you. It lets you explore everything from Saturn's rings to black holes. Each page is full of awesome photos, facts and charts. It's a journey through space you won't want to miss.

-Mike Taylor



The Sign of the Seahorse

by Graeme Base

Abrams Publishing, \$19.95

Do you like rhyme? Then this book is definitely worth your time. Underwater action is the main attraction. Follow Corporal Bert and his Soldiercrab Army as they try to find out who's polluting the coral reef. Journey through creepy canyons and strange sunken wrecks. Will they foil Gropmund Grouper's sinister scheme? Find out for yourself in this fascinating, fishy tale.

-M.T.

Inside the Whale and Other Animals

by Ted Dewan

Doubleday Books, \$16.00

Great illustrations take you on a fantastic voyage inside 21 different creatures. They show such neat things as how a rattlesnake swallows a mouse whole, what a camel stores in its hump and why a starfish turns its stomach inside out to eat. It's all *in* there!

-Robert Moll

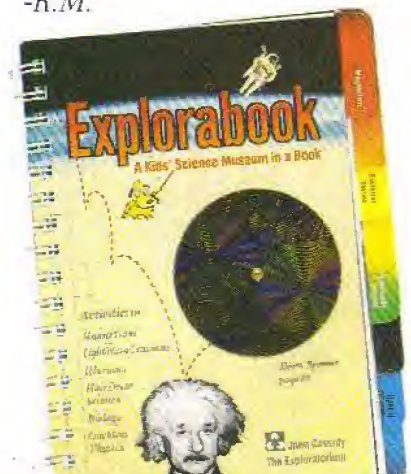
Explorabook

by John Cassidy

Klutz Press, \$17.95

One of the coolest science museums is the Exploratorium in San Francisco. Having this book is the next best thing to being there. Wacky, wonderful activities (tools are included) teach you about light, magnetism and other super stuff. The Exploratorium makes science fun—and so does Explorabook.

-R.M.



SOFTWARE

Interludes NotePlay
for IBM and compatibles
Ibis Software, \$49.95

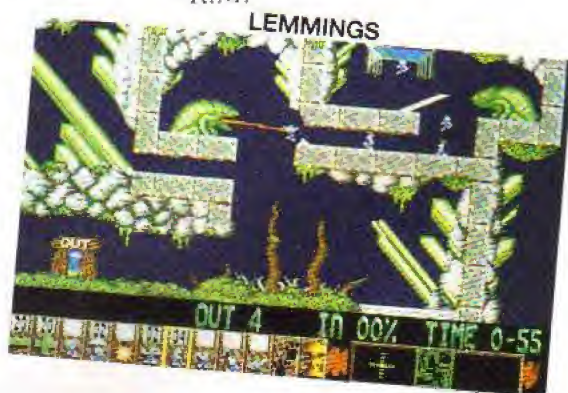
This noteworthy program makes reading and playing music as easy as do, re, mi. Select a skill level and the program composes a musical exercise. Your fingers will race across the computer keyboard, trying to play back the correct notes as fast as you see and hear them. By the time you reach the highest skill level, you'll probably be ready to play your favorite tune.

-Adam Spring

Oh No! More Lemmings
for IBM and compatibles
Psygnosis Software,
\$49.95

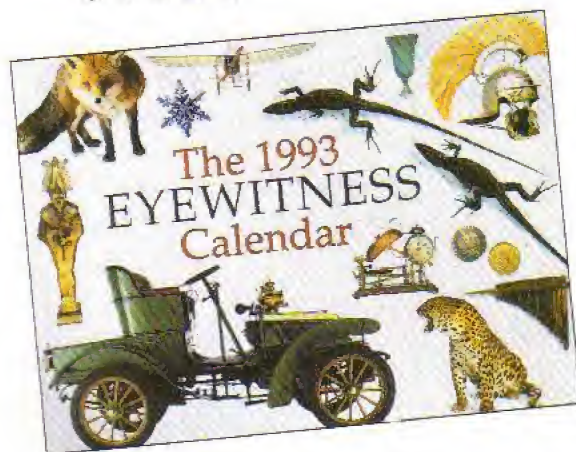
They're back! But can these mindless Lemmings survive another 100 levels of cliffs, lakes and pitfalls? They might have a chance if you get them to dig tunnels, build bridges and perform other skills. If not, their next stop will be Lemming heaven.

-R.M.



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OTHER



1993 Eyewitness Calendar

Alfred A. Knopf, \$9.95

Here's a calendar that does more than just keep track of the days. Each month features a different theme, such as cars, explorers and reptiles. The factoids and photos are so eye-opening, it'll be hard to resist turning the page before the month ends!

-R.M.



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By Beth Chayet



Bow! Wow!

Put a number into each circle so that every line of three bows totals 15. **You can only use the numbers one through nine.** We've put in some numbers to get you started. When you're finished, take a bow!



Z

Z

L

E

S

All Tied Up

Like a game of pick-up sticks, the object is to—mentally—remove all the ribbons one by one. The trick is not to disturb another ribbon. (Moving a ribbon *under* another ribbon disturbs the top ribbon.) Start by taking off the ribbon on the top of the pile. Then write down the letters of the remaining ribbons in the order they should be removed.

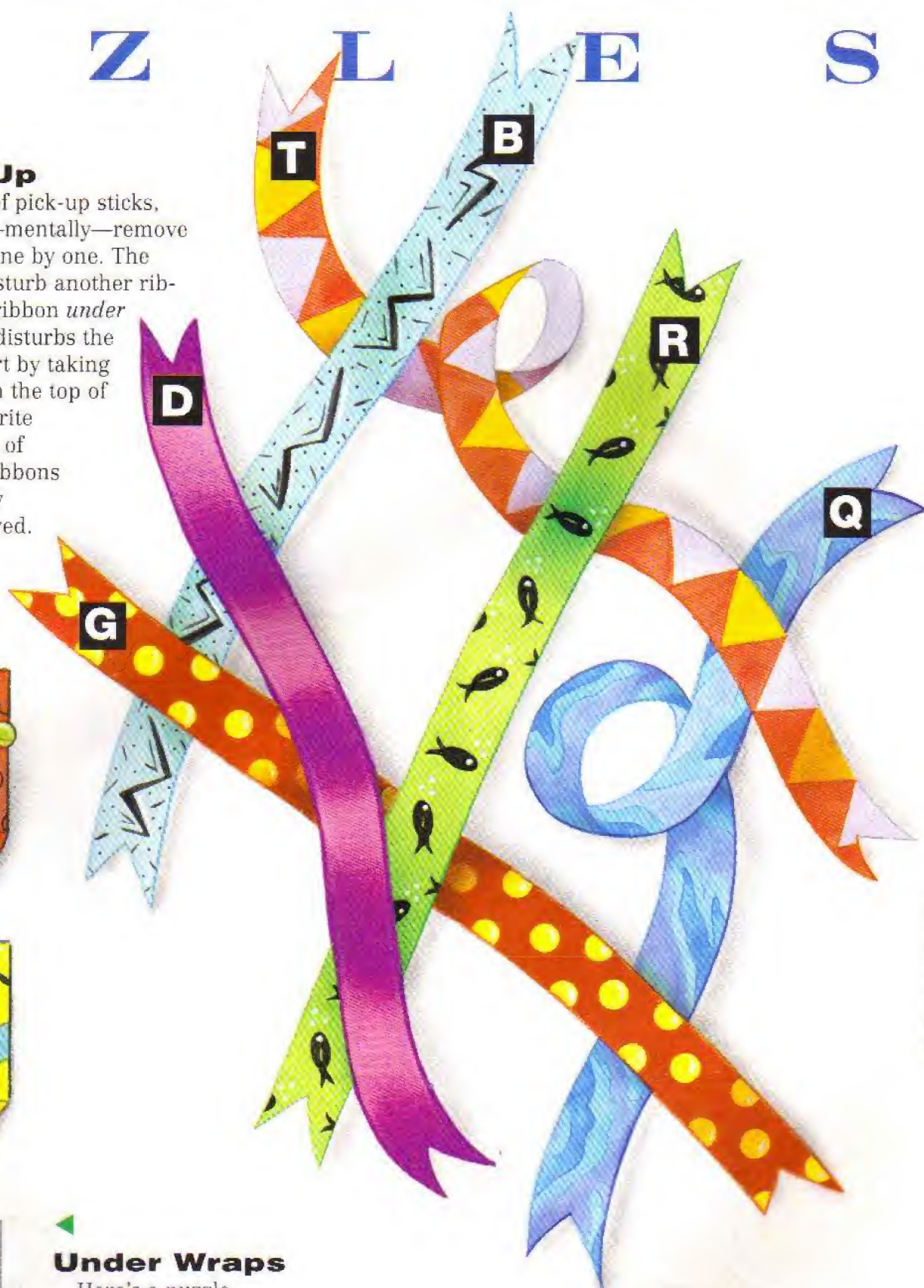


ILLUSTRATION BY DOMINICA CORNIA



Under Wraps

Here's a puzzle you'll get all wrapped up in! Try to move any one box to make two rows of *four* boxes.

Answers on the Did It page.

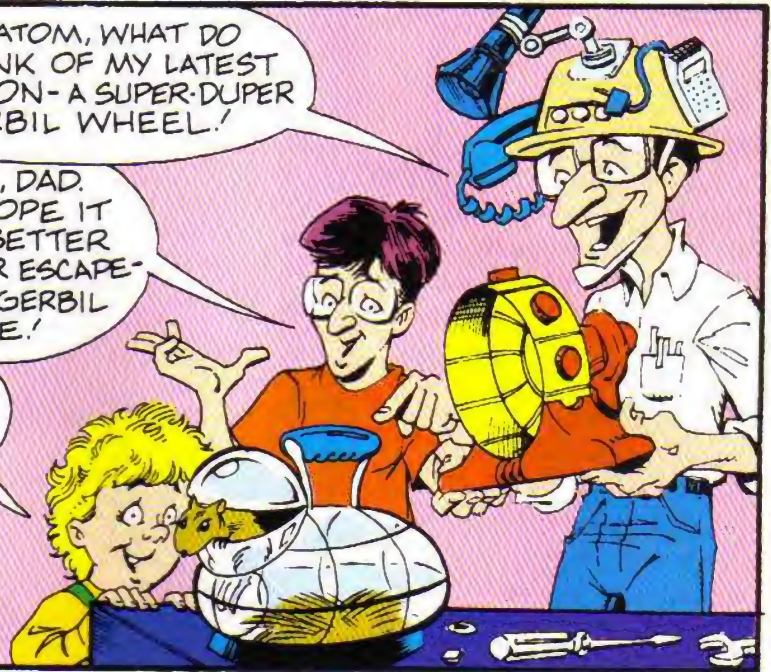
HONEY, I BLEW UP THE KIDS' GERBIL!

A SQUARE ONE PUZZLE
STORY: CURTIS SLEPIAN
ART: KEITH WILSON

BIC, ATOM, WHAT DO YOU THINK OF MY LATEST INVENTION-A SUPER-DUPER GERBIL WHEEL!

COOL, DAD. BUT I HOPE IT WORKS BETTER THAN YOUR ESCAPE-PROOF GERBIL CAGE!

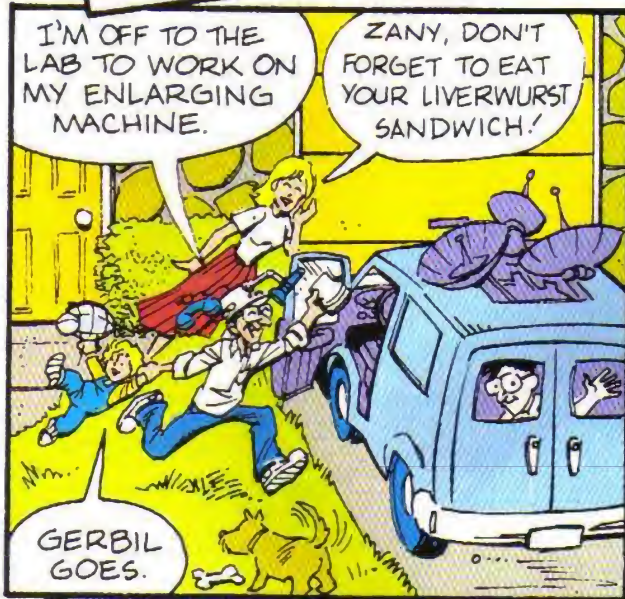
GERBIL WANTS NAP.



I'M OFF TO THE LAB TO WORK ON MY ENLARGING MACHINE.

ZANY, DON'T FORGET TO EAT YOUR LIVERWURST SANDWICH!

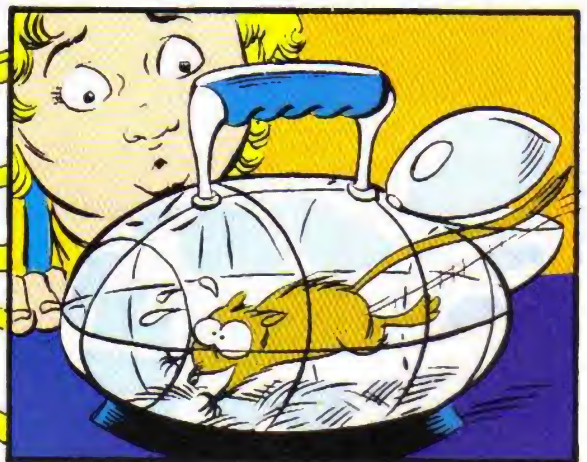
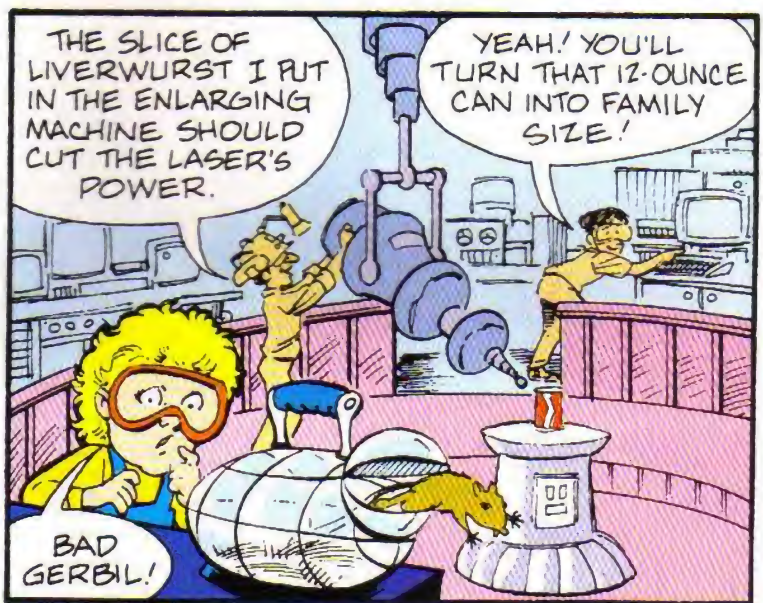
GERBIL GOES.

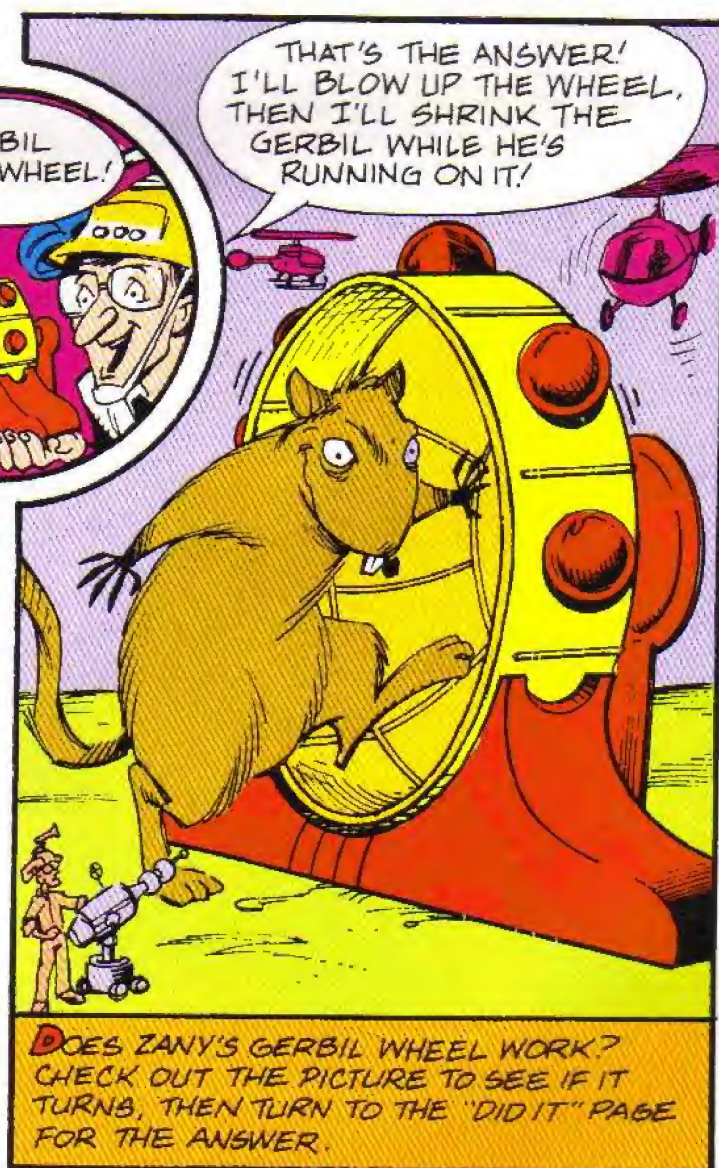
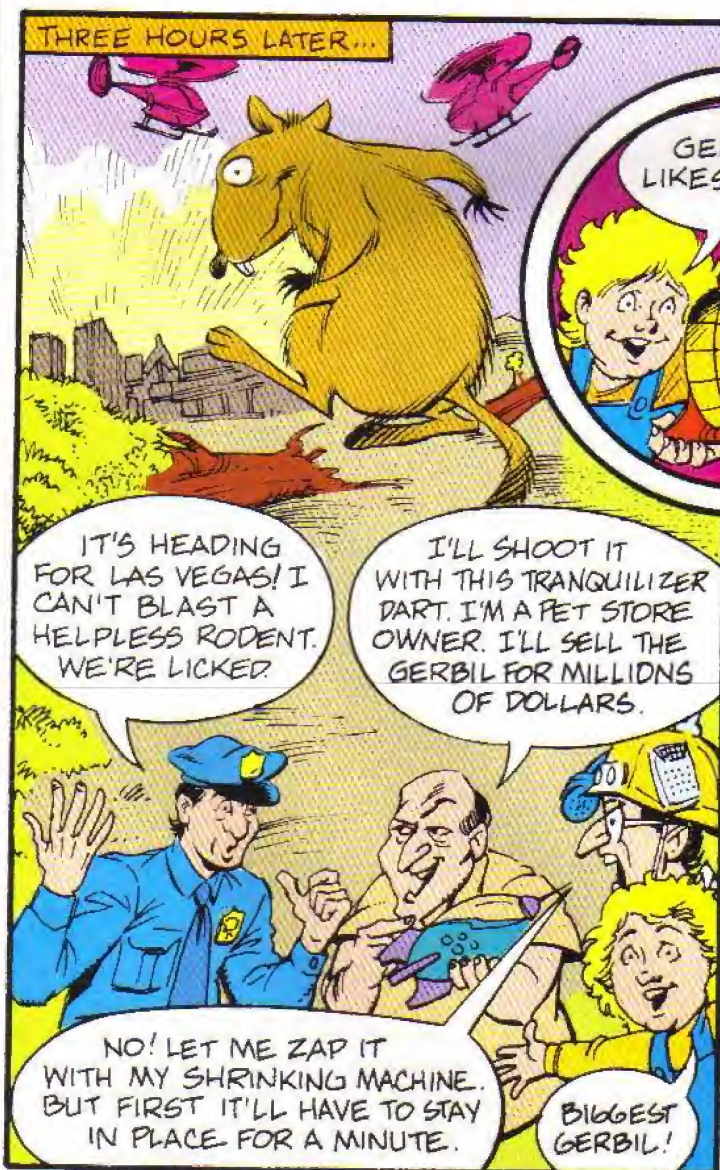
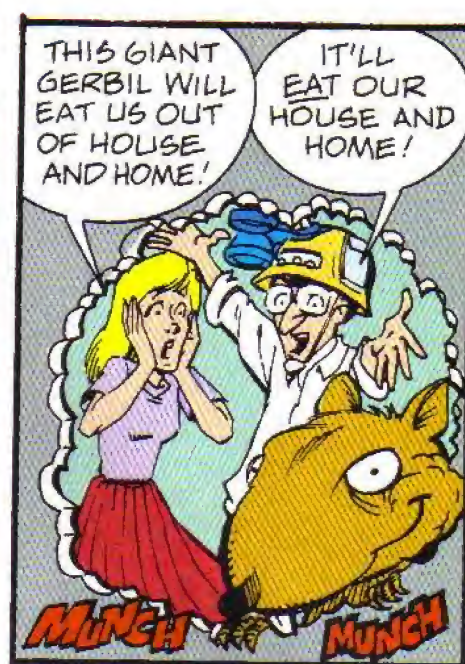


THE SLICE OF LIVERWURST I PUT IN THE ENLARGING MACHINE SHOULD CUT THE LASER'S POWER.

YEAH! YOU'LL TURN THAT 12-OUNCE CAN INTO FAMILY SIZE!

BAD GERBIL!





TROUBLE AT THE TO

A FUNTASTIC OBSERVATION



TOY FACTORY

VISION PUZZLE

The two pictures of a toy factory look the same. But if you look closely, you'll see that they're not. Can you find at least 20 things that are different in these two scenes?

By Beth Chayet

The answer is on the Did It page.





GOING BATTY

Holy vampire bats! Batman has been sent on another dangerous mission. He must go into the bat cave and gather slimy, vampire-bat drool. Can you lead him to where these bloodthirsty creatures are hanging out? Be careful. A wrong path will leave you in the dark.

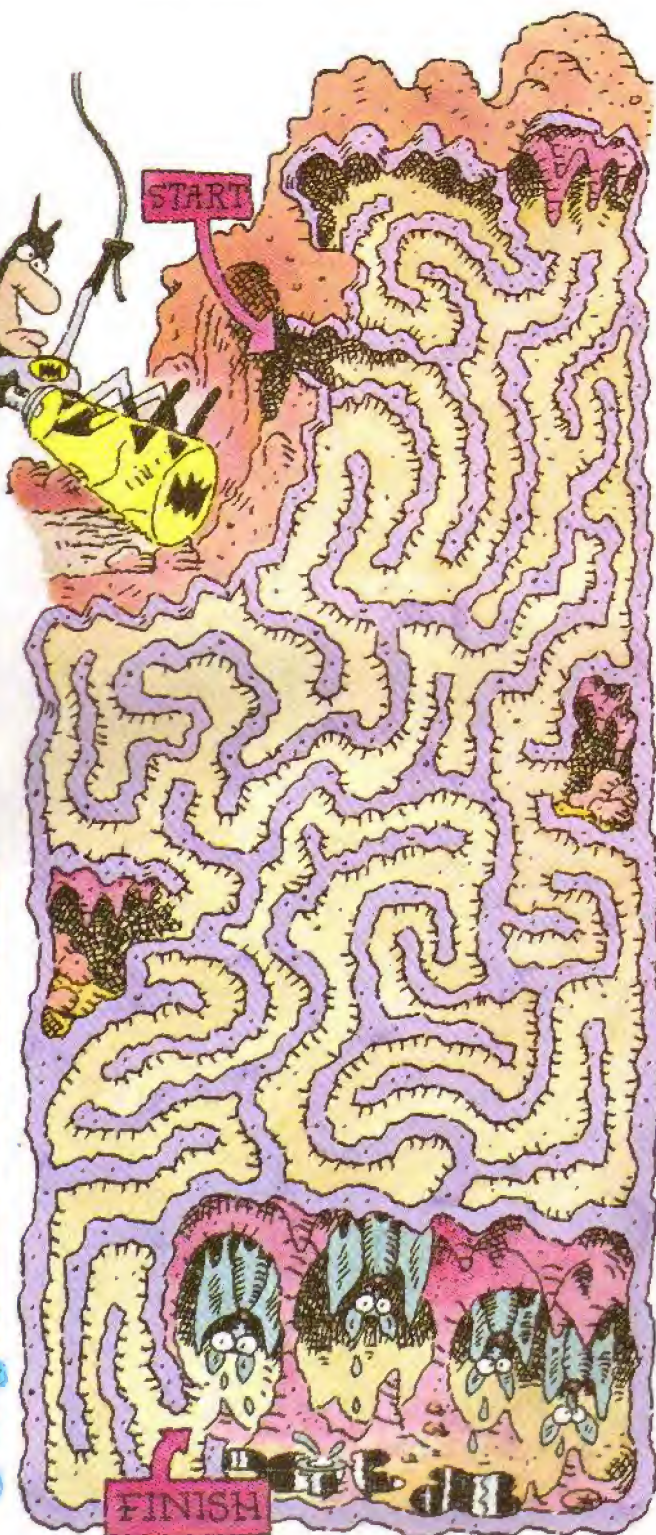
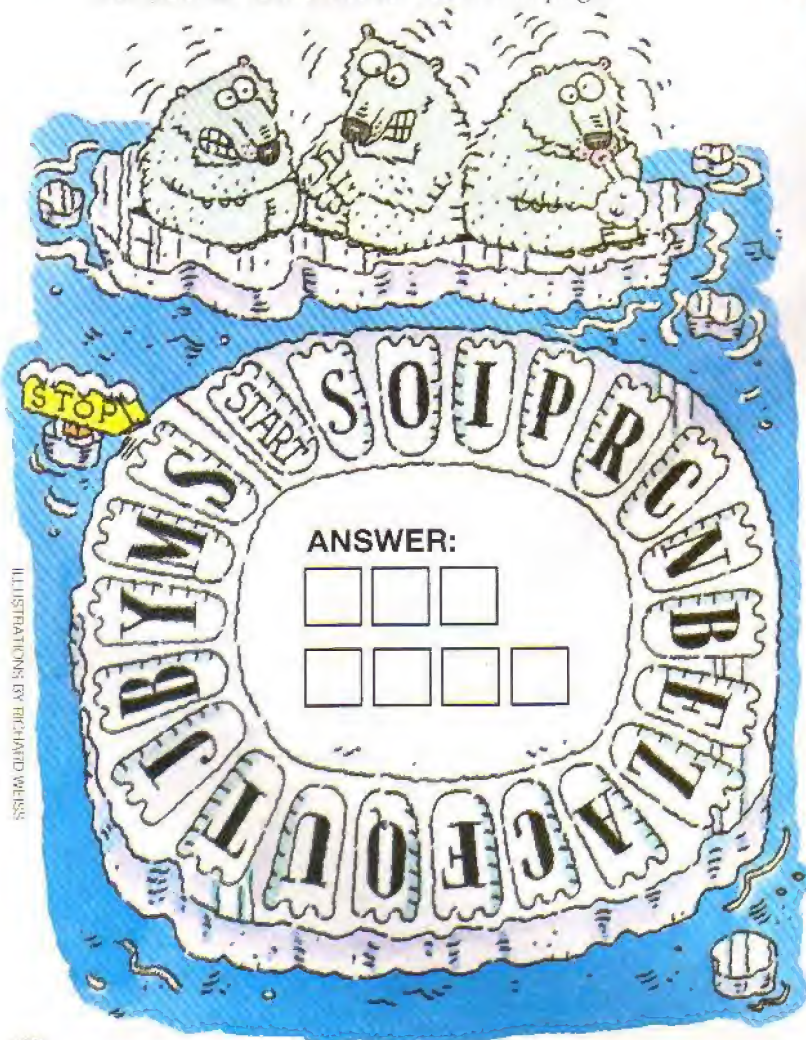
Creep to the Did It page for the answer.

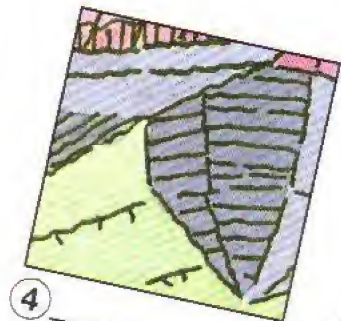
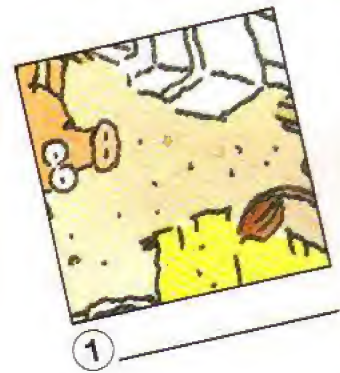
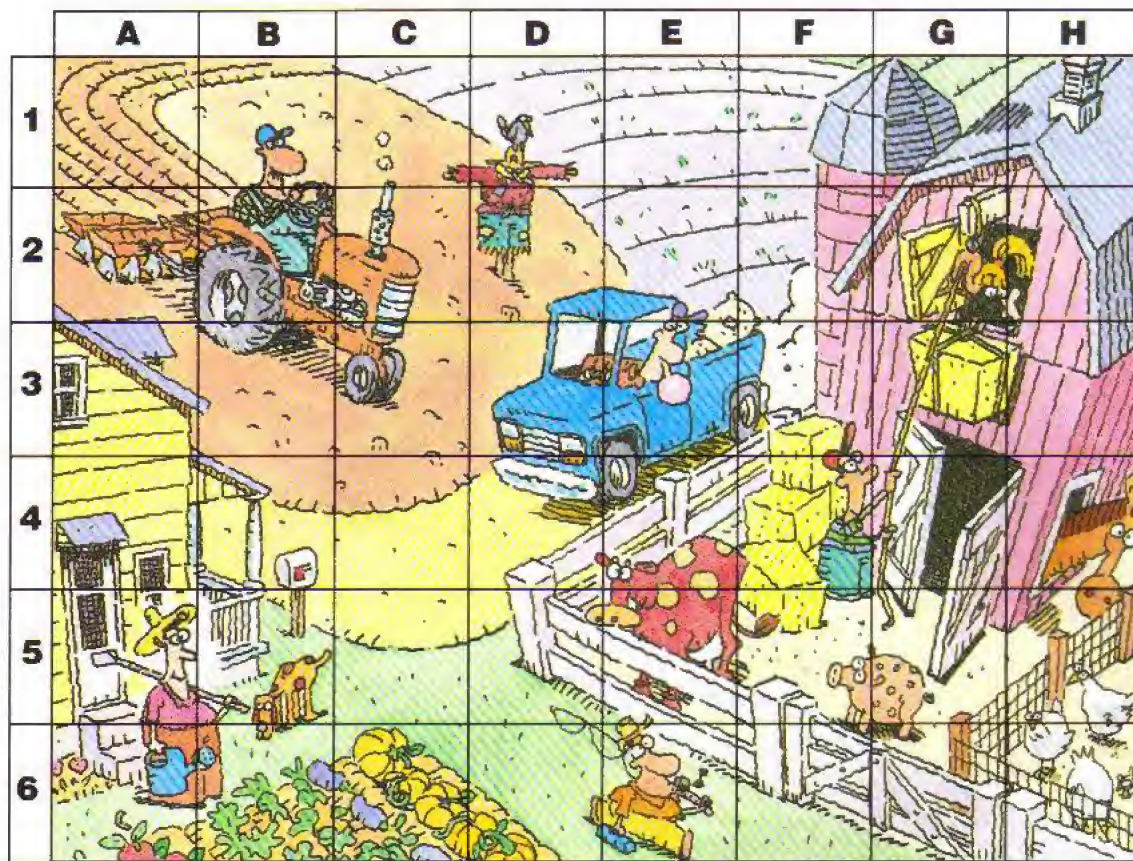
GROAN AND BEAR IT

Churchill's polar bears are going in circles trying to solve this riddle: *What do you get when baby polar bears stay out in the cold too long?*

To help them solve it, begin on the space marked "start." Move three spaces to the right. In the first box in the center, write down the letter you come to. Continue around the wheel, and write down every third letter you land on until you reach "stop." The letters in the boxes will spell out the answer to the riddle.

The answer is frozen on the Did It page.





THE WHOLE PICTURE

Hubble's in trouble. The telescope got turned around and took this picture of old Mac's farm. Curious scientists made close-ups of parts of the picture. The close-ups are around the grid.

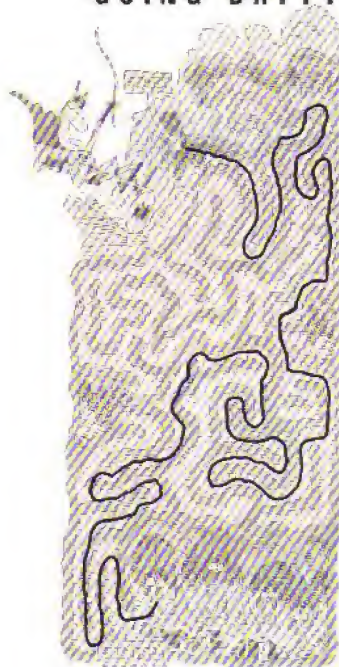
Can you help astronomer Ima Gazer figure out where in the big picture each close-up came from? Under each close-up photo, put the letter and number from the area on the grid it came from.

Focus on the Did It page for the answer.



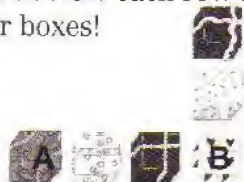
Did it

GOING BATTY



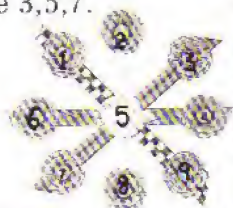
UNDER WRAPS

Place box A on top of box B. Now each row has four boxes!



BOW! WOW!

Here's one solution. But the numbers in each row of bows can also be reversed. For example: 7,5,3 can be 3,5,7.



THE WHOLE PICTURE

1. F-5, 2. D-4, 3. H-4, 4. G-1, 5. B-3, 6. B-1

GROAN AND BEAR IT

The answer to the riddle is: ice cubs.

ALL TIED UP

The order the ribbons should be removed is: D, R, G, B, T, Q.

HONEY, I BLEW UP THE KIDS' GERBIL!

The wheel won't turn: The bumps on the outside of the wheel got stuck on the wheel's base. But the gerbil fell asleep and got shrunk anyway.

3-2-1 CONTACT EXTRA!

Join Stephanie Yu and Z Wright and find out why drugs are a drag on *Brainstorm: The Truth About Your Brain on Drugs*. Watch for this 3-2-1 CONTACT EXTRA on PBS on December 14 at 8:00 P.M. (ET). Check your local TV listings for the exact time and date in your area.

TROUBLE AT THE TOY FACTORY



From left to right, back to front, the changes are: horse changed to zebra, order of stuffed animals switched, man is wearing glasses, new time on clock, bicycle bar moved, added airplane wing, new pat-

tern on cap, extra hobby horse, control switches exchanged, propeller missing, file changed to screwdriver, adjustable wrench to two-sided wrench, stripes on woman's apron changed direction, one less paintbrush in apron, different color in paint bucket, extra airplane wheel on stick, paper has lines instead of pictures, doll has new hair color, teddy bear has different-shaped eyes, box reads "Up" not "Down," arrow pointing different direction, basketball changed to soccer ball.

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I certify that the statements made by me above are correct and complete.

WILLIAM HITZIG, Group Vice President / General Manager



Mickey has a dog gone problem.

Mickey Mouse, Donald Duck, Goofy and Pluto were playing ball in the park. Pluto goes after a fly ball—and disappears! Mickey discovers he's been "dognapped" by the evil Emperor Pete. With his costumes and powers, can Mickey survive the peaks and valleys on the way to Pete's Castle? He's counting on you to help save Pluto.



Mickey must bang light to avoid the giant buzzard



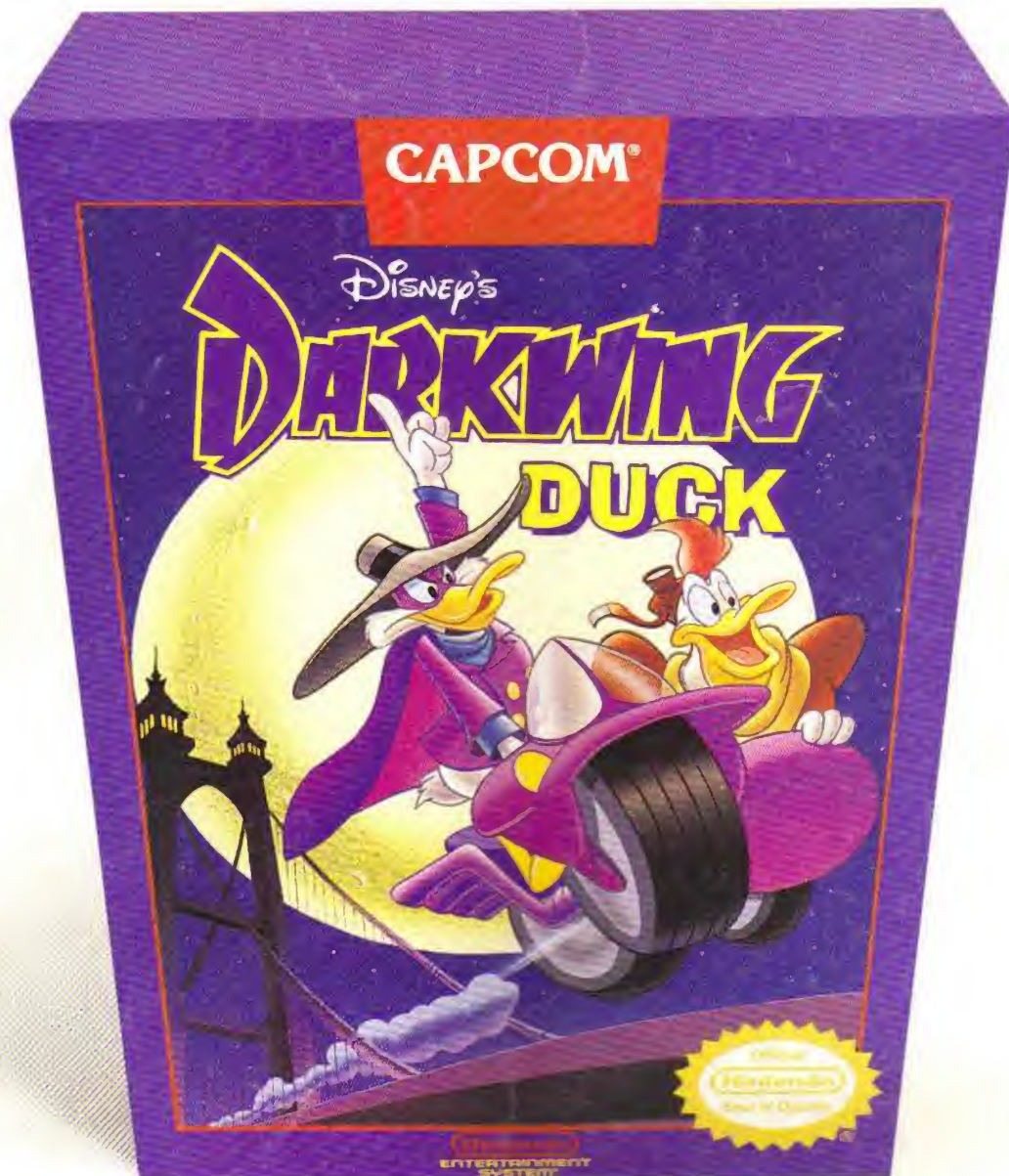
When lava gives Mickey a hot foot, the spikes could be a problem.



With help from Goofy, Mickey's ready to scale Pete's Peak.

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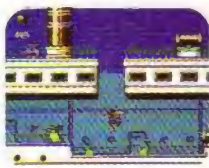
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Only one duck can quack this case.



Watch out for
Steelbeak's flying eggs,
or you'll be fried forever.



On Steelbeak's floating
crime fortress, the
danger comes in waves.



Better move fast, 'cause
these turtles are anything
but slow.

F.O.W.L. has turned St. Canard into one big crimefest. Darkwing Duck's mission: cook their goose for good. Easy? Not! He must first live through 7 dangerous levels where arch enemies like Steelbeak, Quackerjack and Mega Volt await. He can't do it without you. So stop flapping around and get on the case today.

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